

DOCUMENT RESUME

ED 331 399

HE 024 456

TITLE New Jersey College Basic Skills Placement Testing
Fall 1990.

INSTITUTION New Jersey Basic Skills Council, Trenton.

PUB DATE Jan 91

NOTE 94p.

AVAILABLE FROM Basic Skills Assessment Program, New Jersey
Department of Higher Education, 20 West State Street,
CN 542, Trenton, NJ 08625.

PUB TYPE Reports - Research/Technical (143) -- Statistical
Data (110) -- Tests/Evaluation Instruments (160)

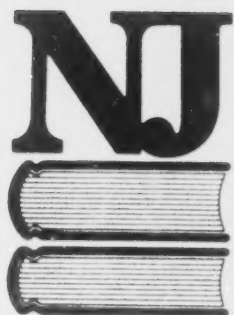
EDRS PRICE MF01/PC04 Plus Postage.

DESCRIPTORS *Achievement Tests; Algebra; *Basic Skills; *College
Freshmen; Computation; English (Second Language);
Higher Education; Homework; Mathematics Skills;
Remedial Instruction; *Remedial Programs; *Screening
Tests; State Colleges; *Student Placement; Verbal
Ability

ABSTRACT

This report offers details of the results of basic skills testing of the entering freshman class in New Jersey's public colleges. Levels of proficiency in verbal skills, computation, and elementary algebra are estimated from performance on the New Jersey College Basic Skills Placement Test. For the 48,568 students tested in the fall of 1990, 24% appeared proficient in verbal skills, 40% appeared proficient in some areas, and 37% lacked proficiency. In computation 32% appeared proficient, 25% appeared proficient in some areas, and 43% lacked proficiency. In elementary algebra, 13% appeared proficient, 29% appeared proficient in some areas, and 58% lacked proficiency. Results are presented for college sector, for recent and non-recent high school graduates, and by gender. Special factors are considered such as high school homework as a factor in proficiency, students for whom English is a second language, and outcomes of skills-deficient students who enroll in college remediation. Appendices contain a description of the test and sample questions, a list of participating independent and proprietary institutions, mean scaled scores from year to year, and a description of the proficiency levels established as a guide for college placement procedures. (JB)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *



New Jersey College

Basic Skills Placement Testing

Fall 1990

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY
Basic Skills Assessment

Program, New Jersey
Department of H.E.

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as
received from the person or organization
originating it.
☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

New Jersey Basic Skills Council

Department of Higher Education

BEST COPY AVAILABLE

MEMBERS

NEW JERSEY STATE BOARD OF HIGHER EDUCATION

Albert W. Merck
Chairperson

The Honorable Stephen Wiley
Vice-Chair

Adrienne Anderson

Dr. William O. Baker

Sister Jacqueline Burns

Julius L. Chambers, Esq.

Anne Dillman

Rabbi Martin Freedman

Thomas H. Gassert, Esq.

Edward D. Goldberg
Chancellor of
Higher Education
Ex Officio

Robert W. Kean, Jr.

Carolyn P. Landis

James J. Marino, Esq.

Edward J. Meade, Jr.

Robert Solomon

Grizel Ubarry

Dr. Deborah P. Wolfe

John Ellis
Commissioner of
Education
Ex Officio

Report to the Board of Higher Education on the Results of the
NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TESTING
FALL 1990 ENTERING FRESHMEN

NEW JERSEY BASIC SKILLS COUNCIL

January, 1991

Robert Lynch, Chair
New Jersey Institute
of Technology

Jose Adames
Kean College of New Jersey

Kwaku Armah
Department of Higher
Education

Madan Capoor
Middlesex County College

Walter Cmielewski
Mt. Olive High School

Delbert Earisman
Upsala College

Lewis Hirsch
Rutgers University,
New Brunswick

Anthony D. Lutkus, Director
Basic Skills Assessment
Program, Department of
Higher Education

Dorothy Minkoff
Trenton State College

Susan Mulligan
Essex County College

Albert Porter
Mercer County Community
College

Raymond Smith
Rutgers University,
Newark

Kurt Spellmeyer
Rutgers University,
New Brunswick

Manya Ungar
National Congress of Parents
& Teachers

Nina Jemmott
Ex Officio
College Outcomes Evaluation
Council Representative,
New Jersey Institute
of Technology

BASIC SKILLS ASSESSMENT PROGRAM

Dennis P. Levy, Assistant Director

Faye A. Frieson, Program Officer

Helene Scarlett, Secretary

ASSESSMENT ADVISORY COMMITTEE

Walter Cmielewski, Chair
Mt. Olive High School

Ansley LaMar
Jersey City State College

Philip Beardsley
Department of Higher
Education

Anthony D. Lutkus
Department of Higher
Education

Madan Capoor
Middlesex County College

Judy Marsiliano
Warren County Community College
Commission

Robert Cirasa
Kean College of New Jersey

Margaret McFadden
Glassboro State College

Anthony J. Evangelisto
Trenton State College

James McGinty
Ocean County College

Donald Generals
Passaic County Community
College

Susan Mulligan
Essex County College

Patricia Kalata
Burlington County College

Gerry Sircus
Bergen Community College

Margaret Kilduff
New Jersey Institute
of Technology

Jeffrey Slovak
Rutgers University,
Newark

Sybil Smith
Montclair State College

MATHEMATICS ADVISORY COMMITTEE

Lewis Hirsch, Chair
Rutgers University,
New Brunswick

Helen Kuruc
Essex County College

David E. Boliver
Trenton State College

Paul Lawrence
Franklin Township Public
Schools

Frank Cerreto
Stockton State College

Anthony D. Lutkus
Department of Higher
Education

Betsy Collins
Glassboro State College

Ruth D. O'Dell
County College of Morris

Angel Eguaras Jr.
Atlantic Community College

Freda Robbins
Jersey City State College

Maria Gushanas
Seton Hall University

Robert Urbanski
Middlesex County College

READING AND WRITING ADVISORY COMMITTEE

Dorothy Minkoff, Chair
Trenton State College

Terrence Healey
Cinnaminson Township Public Schools

Jose Adames
Kean College of New Jersey

Anthony D. Lutkus
Department of Higher
Education

Mary Ellen Byrne
Ocean County College

Robert Lynch
New Jersey Institute
of Technology

Dennis Donahue
New Jersey Institute
of Technology

RoseAnn Morgan
Middlesex County College

Delbert Earisman
Upsala College

Marianne Reynolds
Mercer County Community
College

Pamela Farrell
Red Bank Regional
High School

Joy Stone
Montclair State College

Carole Gavin
Burlington County College

Charles Thomas
Bergen Community College

Charlee Harris
North Plainfield
High School

Ron Topham
Brookdale Community College

TABLE OF CONTENTS

<u>Contents</u>	<u>Page</u>
EXECUTIVE SUMMARY.....	I
INTRODUCTION.....	1
Definition of Basic Skills.....	1
Nature of Test.....	2
Placement.....	3
Reporting Format.....	3
THE TEST-TAKERS.....	4
RESULTS.....	5
Statewide Findings.....	5
Trends By College Sector.....	6
Recent High School Graduates.....	7
Trends for Recent High School Graduates.....	7
Results by High School Program.....	8
Results by Category of High School.....	8
Statistical Interactions.....	9
High School Mathematics and College Proficiency.....	10
Non-Recent High School Graduates.....	11
Proficiencies By Gender.....	12
High School Homework: A Factor in Proficiency.....	12
Students for Whom English is a Second Language.....	12
DISSEMINATION OF NJCBSPT RESULTS.....	14
To Colleges.....	14
To Students.....	14
To High Schools.....	14
To The Board of Higher Education and the Higher Education Community.....	14
To Interested Citizens.....	14
OUTCOMES OF SKILLS-DEFICIENT STUDENTS WHO ENROLL IN COLLEGE REMEDIATION.....	15
RECOMMENDATIONS.....	16

LIST OF FIGURES

Figure 1	Levels of Student Proficiency by Sector: Verbal, Fall 1990.....	17
Figure 2	Levels of Student Proficiency by Sector: Computation, Fall 1990.....	18
Figure 3	Levels of Student Proficiency by Sector: Elementary Algebra, Fall 1990.....	19
Figure 4	Levels of Student Proficiency by Skill Area for All Recent High School Graduates: Computation, Fall 1990.....	20
Figure 5	N.J. High School Graduates -- QEA Public and Private, Non-QEA Public and Private, 1990; NJCBST Takers by Year of High School Graduation, 1988-90; Graduates by H.S. Program Type: Academic, Career, General, Other, 1990.....	21

LIST OF TABLES

Table 1	Ten Year Comparison of Statewide Test Results 1981-1990.....	22
Table 1A	NJCBSPST Mean Scaled Scores, Statewide 1981-1990.....	23
Table 2	Ten Year Comparison of Sector Test Results, County Colleges 1981-1990.....	24
Table 2A	NJCBSPST Mean Scaled Scores, County Colleges 1981-1990.....	25
Table 3	Ten Year Comparison of Sector Test Results, State Colleges 1981-1990.....	26
Table 3A	NJCBSPST Mean Scaled Scores, State Colleges 1981-1990.....	27
Table 4	Ten Year Comparison of Sector Test Results, Rutgers 1981-1990.....	28
Table 4A	NJCBSPST Mean Scaled Scores, Rutgers 1981-1990....	29
Table 5	Ten Year Comparison of Sector Test Results, NJIT 1981-1990.....	30
Table 5A	NJCBSPST Mean Scaled Scores, NJIT 1981-1990.....	31

ContentsPage

Table 6	Ten Year Comparison of Statewide Results for Recent High School Graduates 1981-1990.....	32
Table 6A	NJCBSPT Mean Scaled Scores, Statewide Comparison of Recent High School Graduates 1981-1990.....	33
Table 6B	1990 NJ High School Graduates, Verbal Proficiency Categories by High School Program Type.....	34
Table 6C	Proficiencies of 1990 NJ High School Graduates by School Category.....	35
Table 6D	Relationship Between Mathematics Courses Completed in High School and the Computation Proficiency of the Students Tested: 1990 NJ Recent High School Graduates Only.....	36
Table 6E	Relationship Between Mathematics Courses Completed in High School and the Elementary Algebra Proficiency of the Students Tested: 1990 NJ Recent High School Graduates Only.....	37
Table 7	1989-1990 Test Results of Non-Recent Graduates...	38
Table 8	Students Tested, Fall 1990 by Gender Within Sector.....	39
Table 9	Proficiencies by Gender and College Sector.....	40
Table 9A	Proficiencies in Elementary Algebra By Gender and High School Mathematics Course-Taking Pattern for 1990 Graduates.....	41
Table 10	Students Tested, Fall 1990 by Anticipated Enrollment Status Within Sector.....	42
Table 11	Students Tested, Fall 1990, by Year of High School Graduation.....	43
Table 12	Students Tested, Fall 1990, by High School Program.....	44
Table 13	Mathematics Courses Taken in High School, Prior to Fall 1990.....	45
Table 13A	Ten Year History of High School Mathematics Courses Taken in High School.....	46

Contents

Page

Table 14	Comparison of Background Data of Students Tested Statewide, 1981-1990.....	47
Table 15	Comparison of Background Data of Student Tested by Sector, 1990.....	48
Table 15A	Comparison of Background Data of Student Tested by Sector, 1990 (continued).....	49

LIST OF APPENDICES

Appendix A	Description of the New Jersey College Basic Skills Placement Test and Sample Questions.....	50
Appendix B	Participating Independent and Proprietary Institutions.....	61
Appendix C	NJCBSPT Year to Year Score Equating.....	62
Appendix D	A Description of the Proficiency Levels Established by the Basic Skills Council as a Guide for College Placement Procedures.....	65

Special Acknowledgements

The Basic Skills Council and Program staff wish to thank Dr. Philip Beardsley, Director of the Department of Higher Education's Research Office, for his expert computer analyses which greatly added to the value of this report.

We acknowledge the assistance of Glenn Lang, Associate Director, Educational Opportunity Fund, and Sharon Schley, Policy, Planning & Research, who assisted in preparation of the graphics included in the report.

NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TESTING

Fall 1990

EXECUTIVE SUMMARY

The New Jersey College Basic Skills Council annually reports to the Board of Higher Education on the results of basic skills testing of the students admitted to the state's public institutions of higher education (as well as participating independent colleges and degree-granting proprietary schools). The College Basic Skills Assessment Program not only tests incoming students; it also evaluates collegiate remedial programs. Students identified as needing skills remediation are tracked for two years by the colleges and their outcomes are subsequently described by the Basic Skills Council in a separate report. The current report details the test results for the students entering in Fall 1990.

Levels of proficiency are estimated from performance on the New Jersey College Basic Skills Placement Test (NJCBSPT). Annually revised and administered over the past 13 years, the NJCBSPT is designed to assist colleges in placing already-admitted students into remedial or first college-level English and mathematics courses and to provide data on the status of the freshman class to the Board of Higher Education. Placement of students into courses is done by the individual colleges, using combinations of NJCBSPT scores and other information. In constructing their placement algorithms, the colleges have agreed not to use scores below the cut scores used by the Council in this report to define the "Lack Proficiency" category.

The Test Takers

Virtually all admitted students -- full- and part-time (including non-matriculated students who accumulate 12 credits), regular, special and Educational Opportunity Fund (EOF) students, English As A Second Language (ESL) completers, and transfers without college-level English composition or mathematics credits -- are tested. This year the public and participating private colleges and universities in the state reported testing 48,568 students -- within a percentage point of the Fall 1989 total. Spring semester admissions, which are not included in this report, typically raise the final total to approximately 65,000 students.

- Of the total, 28,399 or 58% were recent (1990) high school graduates. The recent graduates have declined both in terms of absolute numbers (-1,780) and in percentage of total (-4%). Students who graduated before 1988 now make up 22% of those tested.
- Of all students tested, only 58% reported having taken an "academic" or college preparatory program in high school. Of students tested at the county colleges, only 46% took an academic program in high school.

- Of the 1990 New Jersey high school graduates tested, approximately 80% (22,225) graduated from public high schools, 13% could be identified as graduates of private schools, and 7% were uncoded or came from out-of-state high schools. Nearly 15% of the public school graduates could be identified as coming from "special needs" districts (i.e., those that will qualify for increased state aid under the definitions in the New Jersey's Quality Education Act [QEA] of 1990).
- Students tested at community colleges (31,472) reached an all time high both in percentage of the total (64.8%) and in absolute numbers. State college students (17.8%) and Rutgers students (10.5%) were at ten-year lows in terms of both numbers reported tested and percentage of total.

The Overall Results

The NJCBSPT contains sections on reading comprehension, sentence sense, essay, computation and elementary algebra. The overall proficiency in verbal skills is reported by a Total English composite score derived by combining the Reading Comprehension, Sentence Sense and Essay subscores. Computation and elementary algebra proficiencies are determined directly from the respective subtests.

Fall 1990 students were judged to have the following levels of proficiency in verbal and mathematics skills according to the standards of college readiness set by the Basic Skills Council:

In verbal skills:

24% appeared proficient,
40% appeared proficient in some areas, and
37% lacked proficiency.

In computation:

32% appeared proficient,
25% appeared proficient in some areas, and
43% lacked proficiency.

In elementary algebra:

13% appeared proficient,
29% appeared proficient in some areas, and
58% lacked proficiency.

Statewide data for the last ten years, displayed in Table 1, reveal the following:

- The percentage of students who lack proficiency in reading/writing is at a ten-year high (37%).
- Students' computational skills appear to have improved. The percentage lacking proficiency is at a ten-year low of 43%, although the absolute level is still far below expectations of college faculty.

Results by College Sector

The differing missions of the state's higher education sectors are mirrored in the selectivity of their admissions practices. The state colleges, Rutgers, and NJIT have selective admissions, while the 19 county community colleges have open admissions policies. The test results parallel these differences; however, all colleges enroll some disadvantaged and academically underprepared students. The percentages of students in each proficiency category by public college sector for 1990 are displayed below:

Proficiencies by College Sector

	APPEAR PROFICIENT %	APPEAR PROFICIENT IN SOME AREAS %	LACK PROFICIENCY %
COUNTY COLLEGES			
Verbal Skills	15	39	46
Computation	19	25	56
Elementary Algebra	4	22	74
STATE COLLEGES			
Verbal Skills	35	43	23
Computation	47	28	25
Elementary Algebra	20	44	36
RUTGERS			
Verbal Skills	58	36	7
Computation	79	15	7
Elementary Algebra	54	37	9
NJIT			
Verbal Skills	32	45	23
Computation	79	17	5
Elementary Algebra	56	39	5

The sector-wide proficiency results in this report approximate the percentages of students who will be placed in remedial courses at the colleges. The results cannot be exact for three reasons: 1) not all students who are admitted and tested actually choose to enroll in the institutions, 2) the NJCBSPT is but one of the indicators institutions use to make placement decisions about individual students, and 3) some institutions use standards higher than the "Lack Proficiency" cut-off score in placing their students.

Ten-Year Trends Noted by Sector

Observations over the 1981-90 period are described below for three college sectors. Unlike in the other sectors, trends at NJIT cannot be as easily identified

because the readily apparent year-to-year fluctuations in percentages are due at least in part to the relatively small number of freshman.

- At the county colleges: 31,472 is the highest number of students tested since the NJCBSPT began in 1978. In computation, we note the lowest percentage in the "Lack Proficiency" category (56%) since 1981. In elementary algebra, there has been a 3 percentage point improvement in "Lack Proficiency" category compared to the last two years (77% vs. 74%), also a ten-year best.
- At the state colleges: there have been small improvements in both computation and elementary algebra results, the best proficiency figures in the ten-year period.
- At Rutgers: a trend was noted toward improvement in computation (only 7% "Lack Proficiency") and elementary algebra ("Lack Proficiency" category at a ten-year low of 9%).

Results for Recent High School Graduates

Over the decade recent high school graduates have ranged from 61 to 66% of the students tested. In 1990, however, only 58% (28,399) of the test-takers were recent graduates. Fifty-eight percent (58%) of the class of '90 reported that they had taken an "academic" program in high school. The proficiencies for all recent graduates are given below. The "Lack Proficiency" category in verbal skills, which had been very stable in the 28-29% range through the late 1980's, has worsened to 32% in 1990. In contrast, both the computation and elementary algebra proficiencies have improved. The "Lack Proficiency" category in computation has declined to 33% and algebra to 43%, both representing the best performance in ten years.

Proficiency of Recent High School Graduates

	APPEAR PROFICIENT	APPEAR PROFICIENT IN SOME AREAS	LACK PROFICIENCY
Verbal Skills	27%	42%	32%
Computation	40%	27%	33%
Elementary Algebra	20%	37%	43%

Results by High School Program. Verbal skills proficiencies of recent graduates who took their high school's academic program were considerably better than those of students who took "general" or "vocational" tracks. Among graduates who took the academic program, public and private school students did not differ in verbal skills. However, among graduates who took the "general" program, private schools had proportionally fewer students in the "Lack Proficiency" category (45% vs. 57%) in verbal skills.

Subgroups of Recent New Jersey High School Graduates. Using student-supplied high school affiliations, analyses of subgroups of the recent New Jersey graduates by high school type were performed. In addition to comparisons of the

performance of recent graduates from public vs. private schools, comparisons of "QEA" vs. "non-QEA" school districts were made. The "QEA" school category was defined in accordance with the outcome of a longstanding controversy in New Jersey over equity in school funding formulas. In 1990 the state legislature passed the Quality Education Act (QEA) which defined "special needs" school districts as those inequitably funded by the state in the past, and directed that increased funding be allocated to these districts in the future. The analyses in this report precedes any funding enrichment and can serve as baselines against which to measure future changes in the college-going population from QEA districts. The key findings of the subgroup analyses are as follows:

- Proportionally fewer recent NJ graduates from private (includes parochial) than from public high schools fell into the "Lack Proficiency" category in verbal skills (by 7 percentage points). However, there were proportionally fewer public than private high school graduates in the "Lack Proficiency" category both in computation (by 6 percentage points) and in elementary algebra (by 2 percentage points).
- Graduates tested from "special needs" (QEA) public school districts had much greater percentages in the "Lack Proficiency" category in all skill areas when compared to public school graduates from non-QEA districts.

Public vs. private school graduates were compared both within and outside of QEA locations. Specific patterns of interaction were noted, as follows:

In verbal skills: fewer graduates of private schools located in QEA areas were in the "Lack Proficiency" category (by 19 percentage points) in verbal skills than graduates from QEA public schools; private school graduates also appeared better prepared than public school graduates in non-QEA areas, but the difference was smaller by (7 percentage points).

In mathematics: while proportionally fewer public school graduates were in the "Lack Proficiency" category in computation, the difference was primarily in the Non-QEA areas. Within QEA areas, public and private graduates had about the same percentages in "Lack Proficiency" category. In the elementary algebra, public schools and private schools differed by one point in the "Lack Proficiency" category, both in QEA and Non-QEA districts.

Concluding Comments

The size of the "Lack Proficiency" category continues to be a concern for the higher education system in New Jersey. The improvements noted in terms of the reductions in the size of the "Lack Proficiency" category in computation and elementary algebra are positive trends that may be reflections of the increased emphasis on basic mathematics in New Jersey high schools over the past several years. The decrease (by 3 percentage points) in verbal skills proficiencies of the recent graduates tested is both disturbing and puzzling given the increased emphasis on writing in the public schools. Partial explanations may lie in slight shifts in the background characteristics of the 1990 graduates who tested at New Jersey colleges this year. For example, recent graduates who reported taking an "academic" high school program declined by 2 percentage points statewide this year (from 60% to 58%). In addition, of all the recent graduates tested this year, 50.8% tested at the community colleges, an increase of 1.5 percentage points compared with 1989 (49.3%). Thus, part of the decline may be attributed to the tendency of less well prepared students to select the open admission colleges; this year

these students made up a slightly larger proportion of the community college sector than in the past. Further, the percentage of test-takers who report speaking a language other than English at home has increased to an all time high of 19%, which may depress students' verbal proficiencies as measured by the NJCBSPT.

Recommendations

Many college school academic collaborations currently function well in New Jersey. If New Jersey is to realize an improvement in the reading, writing and mathematics proficiencies of our recent high school graduates, the Council suggests that work on these subject areas increasingly should be the focus of such college-school relationships. The potential for greater collaboration is heightened now that new state tax revenues will be allocated to the QEA school districts whose college-going graduates' scores are so frequently in the Council's "Lack Proficiency" categories.

Because large numbers of students from non-academic high school programs enter New Jersey's higher education system each year, the Basic Skills Council urges the Chancellor, the Board of Higher Education and individual colleges to accelerate their efforts to create and fund expanded academic linkages between the schools and our colleges. It is the Council's hope that college-level skills expectations can be more clearly delineated for students, *including those in the non-academic high school programs who so often choose to enroll in our community colleges.*

The Basic Skills Council recommends that the Departments of Education and Higher Education develop in the next year a formal plan of research that will begin to explore the relationships between the NJCBSPT and the recently field-tested 11th grade High School Proficiency Test (HSPT).

The Basic Skills Council recommends that the Department of Higher Education continue to support the development of a revised NJCBSPT to be in place for the fall of 1993, the year in which the 11th grade HSPT will begin to "count" for high school graduation, and the year in which the Preliminary Scholastic Aptitude Test (PSAT) will begin to reflect the changes in the new Scholastic Aptitude Test (SAT) from the College Board. New advances in measurement theory and approaches to testing and reporting proficiencies are being developed around the nation. The Council recommends that the NJCBSPT be maintained as an instrument of the highest quality and that it be revised for 1993 in concert with the changing academic expectations and measurement methodologies.

SUMMARY OF CAUTIONS IN INTERPRETING DATA IN THIS REPORT

- This is a report on admitted, students tested at our colleges. A small percentage may not have subsequently enrolled.
- Each institution makes course placement decisions for individual students and often uses multiple indicators, hence the "Lack Proficiency" category is a strong estimate, but not an exact count of students who will be required to take remedial instruction. Some colleges use standards higher than the "Lack Proficiency" cut scores used here.

- Regarding comparisons of school types and district categories: the comparative data presented can only reflect the subset of all high school graduates tested at our colleges. An estimated 35-40% of New Jersey high school seniors go out of state to college. Consequently, academic outcomes of individual high schools cannot be fairly judged by the placement test results unless a high proportion of the graduates have been tested. Estimates using the most recent data indicate that approximately 28% of all New Jersey public QEA high school graduates took the NJCBSPT and 37% of all private QEA-located high school graduates took the test.

The differences noted here between outcomes of public and private school graduates may not be attributed solely to differences in educational services. The skill levels of students who enroll in each school type may be different at entrance and these differences cannot be controlled in the data presented here.

INTRODUCTION

The New Jersey Basic Skills Testing Program was designed in 1977 with two purposes. First, the program was to provide information to aid colleges in placing students in appropriate courses during the freshman year. Second, the testing program was to report to the Board of Higher Education on the status of basic skills preparedness (in reading, writing, computation and elementary algebra) of the entering freshman class in public colleges and universities. These dual functions continue as the central purpose of the testing program.

In addition to placement testing, the New Jersey College Basic Skills Assessment Program evaluates the effectiveness of public college remedial programs. Periodic reports are issued on two-year cohort studies comparing students needing and completing remediation with their non-remedial counterparts at each of the college's remedial programs.

Definition of Basic Skills

"Basic skills" refers to skills of thought and communication that an individual needs not only to take advantage of the opportunities offered by a college education but also to become a fully participating member of society. These are not the minimal "coping skills" or "life skills" which many consider essential to mere survival (e.g., balancing a checkbook, reading a magazine, filling out a job application). Rather, the "basic skills" of reading, writing, and mathematics are essential for thinking, learning, and succeeding within the context of a college curriculum. They are fundamental building blocks which underlie all adult learning and which the Basic Skills Council¹ believes are required for full participation in our society.

In 1978, the Council, in its first report to the Board of Higher Education, defined and clarified what it meant by "basic skills":

By "basic skills" the Council means the tools of intellectual discourse used in common by participating members of all academic communities. These tools are the language of words and the language of mathematics. Students need these tools to extract information, to exercise and develop the critical faculties of the mind, and to express thoughts clearly and coherently. Without them, learning is impaired; communication is imprecise; understanding is impossible. A test of "basic skills," therefore, is a test to determine whether an individual has developed the practical working skills of verbal and mathematical literacy needed to take advantage of the learning opportunities that colleges provide.

To define "basic skills" in this way is not to deny the validity of other modes of communication--within the artistic realm of discourse, for instance, the languages of music, motion, image, color, light, and texture express a universe of perceptions, feelings, and emotions which cannot be

¹ The New Jersey Basic Skills Council is an advisory group of fifteen faculty and administrators drawn from each of the college sectors in the state of New Jersey and two members-at-large.

expressed adequately by words and numbers and logic alone. Nor is the Council's definition of the "basic skills" inimical to the value of diversity. We are, to the contrary, exceedingly sensitive to the differences between colleges: differences in their students; differences in their curricula and pedagogical philosophies; differences in their missions. But in one respect all colleges are identical: their ultimate purpose is to foster learning. The Council asserts unequivocally that the "basic skills" of reading, writing, and mathematics are a prerequisite to learning at the college level. If the possession of these skills is "standardization," we believe that standardization in this sense is good.

The Basic Skills Council continues to subscribe to this definition, which is embodied each year in the development of the *New Jersey College Basic Skills Placement Test* (NJCBSPT).

Nature of the Test

The NJCBSPT was developed by the Basic Skills Council in conjunction with the Educational Testing Service (ETS) and first administered to freshmen entering public colleges in the fall of 1978. To date more than 650,000 students have taken the NJCBSPT. The purpose of the test is placement at levels at and below the first-level college courses. It is designed to be relatively easy for well prepared students and to discriminate among underprepared students, thus affording colleges the needed range of scores to facilitate placement at several remedial levels. The test measures skills that students entering college should have. Indeed, the Basic Skills Council believes that the level of skills in reading, writing, and mathematics tested by the NJCBSPT is minimal for all students graduating from high school, whether or not they intend to enroll in college.

The NJCBSPT is a three-hour-and-twenty-minute examination consisting of an essay and four multiple-choice sections: Reading Comprehension, Sentence Sense, Computation, and Elementary Algebra. It is a criterion-referenced examination. The test questions address specific skills (such as understanding the main idea in a reading passage, writing in an organized fashion, solving algebraic equations, etc.) which are judged as the minimum necessary to begin college work. Students with adequate skills achieve high scores on the test; superior skills, however, cannot be discerned from the test. The distribution of scores on the multiple choice sections of the test is not "normal" in the statistical sense, since the test is designed to make finer distinctions at the lower end of the range than at the upper end. (See Appendix A for further details on the NJCBSPT, including sample questions and the information provided to students before taking the test.)

The test is required of all freshmen (full- and part-time) entering New Jersey public colleges. In addition, ten independent institutions in the state administer the NJCBSPT to their entering freshmen. (See Appendix B for a list of these independent colleges and universities.)

A new version of NJCBSPT is issued in March of each year, and colleges administer the test locally, on their own schedules, into February of the following year. To promote test familiarity, colleges also mail to each admitted student an *Information Bulletin* (see Appendix A) which contains sample questions for each subtest. This information bulletin assists the students in becoming familiar with the test questions prior to their testing. The student answer sheets (and computer data tapes, if applicable) are

sent to ETS for scoring and data analysis under contract with the Department of Higher Education.

To assure comparability from year to year, each new form of the NJCBSPT is statistically equated to the previous form (see Appendix C for an explanation of equating procedures) and the scores are reported on a consistent scale: from 135 to 189 for verbal skills or "Total English"; 139 to 180 for Computation; and 148 to 190 for Elementary Algebra.

Information on NJCBSPT publications and reports can be found on the inside back cover of this booklet. A technical monograph on the NJCBSPT's statistical properties is provided by ETS each year and is available upon request.

Placement

Students are tested only after admission to college. The results of the tests are used, in conjunction with other information, for initial placement in English and mathematics courses. Proficiency categories for purposes of statewide reporting are defined by the Basic Skills Council (see Appendix D), but individual institutions set their own algorithms for appropriate student placement using NJCBSPT test scores and other available information. Public colleges have agreed not to use placement levels below the Council's suggested minima. The Council has consistently recommended that placement be based not on one subtest score but on a combination of several test scores and other information (such as the Scholastic Aptitude Test scores, Test of Standard Written English score, and high school record).

Most public colleges and universities in the state use multiple criteria for placing students into either remedial or regular college-level courses. The system-wide result of these practices is that virtually all of the enrolled students in the "Lack Proficiency" category and some of the students in the "Appear Proficient in Some Areas" category are identified for remedial courses. The 1990 basic skills test results clearly indicate that the extent of remedial instruction that must be provided by our institutions has not diminished significantly.

Reporting Format

Test results for typical large-scale achievement and/or aptitude tests, such as the Scholastic Aptitude Test, are reported in terms of mean scaled scores and standard deviations. While these measures are useful for these types of instruments (and are included here for the NJCBSPT), the Basic Skills Council believes that for an instrument whose purpose is placement, the percentages of students who need, might need, or do not need remediation are the most important data to transmit to the Board of Higher Education. Consequently, the results reported here are in terms of the percentages of students falling into three proficiency categories: "Lack Proficiency," "Appear Proficient in Some Areas," and "Appear to be Proficient." Descriptions of these levels as related to test performance can be found in Appendix D. The uppermost category, "Appear to be Proficient," is so named because the NJCBSPT does not contain a sufficient number of "difficult" items to ascertain with confidence that a given student is surely proficient in the skill area.

THE TEST-TAKERS

Policies on who must take the NJCBSPT are recommended by the Basic Skills Council and implemented by the Department of Higher Education. All entering full- and part-time students who seek a degree must be tested. In addition, transfer students who have not yet taken an English composition or college-level mathematics course are tested. Further, non-degree seeking students who register for a course that would result in accumulating 12 credits must take the test. The Council recommends the use of the NJCBSPT for speakers of English as a second language only after they have completed any needed ESL program.

Figure 5 illustrates the subgroups in the population tested this year.² Recent high school graduates (28,399) made up 58% of the total (48,568) tested this year. Recent graduates tested have declined by 1,780 students and their percentage of the total test takers dropped 4 percentage points in 1990 to a ten-year low. Non-recent graduates (19,735) made up approximately two-fifths of the test takers. Eleven percent graduated in either 1989 or 1988, while 22% of all test-takers graduated prior to 1988. The older test-takers are concentrated in the community colleges (see Table 11).

The majority of the test-takers were female (52%) -- a pattern which holds in all sectors (except at NJIT). Most students (73%) indicated that they plan to enroll on a full-time basis. Full-time enrollment (Table 10) was the predominant choice at Rutgers (97%) and the state colleges (84%), but less so at the community colleges (64%). Data in Table 14 suggest that aspiration to full-time enrollment among test takers has slowly dropped over the ten-year period (from 78% to 73%).

Only 58% of the test-takers reported taking an "academic" program in high school. The pattern varies directly with the selectivity of the sector in which students are tested. At Rutgers 90% of students have taken an "academic" high school program; at the state colleges, 75%; and at the community colleges, only 46% (down from 49% in 1989). Statewide, 23% reported taking a "general" high school program; 12% took a "career-oriented" (i.e., business, vocational, industrial arts) program; 3% arrived with a General Education Diploma (GED); and just under 3% reported not having graduated at all.

This year the county colleges tested 31,472 students, a ten-year high both in percentage of the total (64.8%) and in absolute number. The state colleges tested 8,643 (17.8%) and Rutgers 5,085 (10.5%) students, which represented ten-year lows for both sectors.

Of the recent graduates, 80% reported attending public high schools (nearly 12% from QEA school districts, 68% from non-QEA) while 13% had attended private high schools, and approximately 7% either had missing codes or had attended out-of-state high schools.

² Data for approximately 700 Passaic County College students were received after the deadline and are not included (approximately 1 percent of all test-takers).

RESULTS

Statewide Findings

The proficiencies described in this report are based on the scores of 48,568 students tested at New Jersey public (and ten private) colleges between March and October of 1990. This total is within 1 percent of the total tested by the same time last year. Not all these students actually enrolled in New Jersey's colleges by the fall of 1990. At the time of this writing, official statewide enrollment figures for new freshmen were not available.

Large proportions (in some sectors, the majority) of students enter our colleges lacking proficiency in at least some areas of reading, writing, computation, and elementary algebra. Table 1 and Figures 1-4 display the levels of proficiency exhibited by our entering freshmen in 1990. The verbal skills area is based on the NJCBSPT Total English score, a composite of the Reading Comprehension, Sentence Sense, and Essay subtests. Computation and elementary algebra proficiencies are based on the results from the Computation and Elementary Algebra tests respectively.

Table 1 displays the statewide results for 1981 through 1990. Over this time, the results were relatively stable; however, the "Lack Proficiency" category in verbal skills reached a ten-year high of 37% in 1990. On the other hand, the "Lack Proficiency" category in computation has improved to a ten-year best of 43%. In general the proficiency percentages have changed by no more than six points over the ten years displayed. In addition, the mean scores for each subtest (see Tables 1A-6A) were extremely stable. This stability is due, in part, to the large number of students tested. To effect a change of only 1 percentage point within a proficiency category, for example, approximately 450 student who are near cut points must have higher or lower scores in a give year.

Of our entering students in 1990, in **verbal skills**:

37% lack proficiency,
40% appeared proficient in some areas, and
24% appeared to be proficient

In computation:

43% lacked proficiency,
25% appeared proficient in some areas, and
32% appeared to be proficient.

In elementary algebra:

58% lack proficiency,
29% appeared proficient in some areas, and
13% appeared to be proficient.

Trends by College Sector

The percentages of students in each proficiency category for the four sectors of New Jersey public colleges (19 county colleges, 9 state colleges, 3 campuses of Rutgers University, and the New Jersey Institute of Technology) are presented in Tables 2-5 for the years 1981-1990.

By virtue of their selective admissions processes, Rutgers, the New Jersey Institute of Technology (NJIT) and the state colleges enroll higher percentages of students who "Appear Proficient" than do the county colleges, which enroll students through an "open admissions" policy. Variations in the proficiency percentages in Tables 2-5 must be interpreted cautiously. Yearly raw-to-scaled-score conversions and consequent rounding of the percentages in the proficiency categories can have as much as a three-percentage-point effect on the size of the category from one year to the next. Consequently, no trend should be inferred from these data until the difference in the categories reaches 5 percentage points in one year or the trend is sustained over many years. By these criteria, the following longitudinal shifts have occurred:

- At the county colleges (Table 2), while the verbal proficiencies are relatively stable (46% "Lack Proficiency"), the "Lack Proficiency" category in computation improved to 56%, the best since 1981, and six points better than 1987. In addition, the "Lack Proficiency" category in elementary algebra has improved from 77% to 74%. While this represents a ten-year best, it is still not an encouraging situation. For the ten-year period, only 4% of community college test-takers were proficient in elementary algebra.
- At the state colleges (Table 3), the proportion of students who "Appear Proficient" in computation has improved from 36% in 1981 to 47% in 1990. There has also been a concomitant decrease in the proportion who "Lack Proficiency," from 33% to 25% in 1990.
- At the state colleges, the proportion of students who "Appear Proficient" in elementary algebra has improved from 10% in the early years to 20%. There has also been a decrease in the proportion of students in the "Lack Proficiency" category, from 50% in 1981 to a ten-year best of 36% in 1990.
- At Rutgers, in computation (Table 4) the proportion of students who "Appear Proficient" has improved from 64% in 1981 to 79% in 1990. The proportion of students who "Lack Proficiency" in computation has declined from 15% in 1981 to 7% in 1990, a ten-year best.
- At Rutgers, in elementary algebra (Table 4) the proportion of students who "Appear Proficient" has improved from the 37-38% level in the early years to 54% in 1990 -- a substantial gain but not equalling the 1988 high of 57%. The proportion of students who "Lack Proficiency" has consistently dropped from 19% in 1981 to 9% in 1990.
- The relatively small number of freshmen at NJIT means that test score changes for only a few students can change the proportions of students in each proficiency category more dramatically than in sectors with a large number of students. Thus year-to-year fluctuations in percentages are larger at NJIT than in other sectors, and trends cannot be as easily identified. The proportion of students lacking verbal proficiency (Table 5) has increased from 14% in 1981 to 23% in 1990. Better prepared students

have declined from 44% of the class in 1981 to 32% in 1990. In elementary algebra those lacking proficiency have remained at a very low percentage (5%), and the proportion of students who "Appear to be Proficient" has risen sharply in one year from, 48% in 1989 to 56% in 1990.

Recent High School Graduates

Of the 48,150 students tested, 28,399 or 58% were "recent" high school graduates, i.e., those who graduated in 1990 (see Tables 6 & 6A). Recent graduates constitute a greater proportion of test-takers at four-year institutions than at two-year colleges (see Table 11). Recent graduates as a percentage of test-takers, in descending order, were 93% at Rutgers, 93% at NJIT, 77% among the state colleges, and 47% among the county colleges.

Of all recent graduates, 51% were tested at the two-year institutions; 23% were tested at the state colleges; 16% were tested at Rutgers; 8% were tested at the private colleges; and 2% were tested at NJIT.

The proficiency percentages of recent graduates indicate that about one in three (32%) needed remedial work in reading or writing, 33% in computation and at least 43% in elementary algebra. Table 6 displays the statewide results for recent high school graduates from 1981-1990. Figure 4 displays the following 1990 proficiency category breakdown:

In verbal skills:

32% lacked proficiency,
42% appeared proficient in some areas, and
27% appeared proficient.

In computation:

33% lacked proficiency,
27% appeared proficient in some areas, and
40% appeared proficient.

In elementary algebra:

43% lacked proficiency,
37% appeared proficient in some areas, and
20% appeared proficient.

Trends For Recent High School Graduates. The magnitude of the "Lack Proficiency" category (Table 6) in verbal skills has reached a ten-year high of 32% while the "Appear Proficient" category has held steady at 27%. Factors which may be contributing to the decline in performance in the lower category include the fact that the tested population now includes a higher percentage of recent graduates who apparently did not originally intend to pursue college (non-academic program test-takers at community colleges) and that the percentage of students who "speak a language other than English at home" is at an all-time high of 19%.

In computation skills, on the other hand, the recent graduates show improvement. The "Lack Proficiency" category has moved to a ten-year best of 33% and the "Appear Proficient" category is also at a ten-year best of 40%. There is a similar improvement in elementary algebra, with the "Lack Proficiency" category shrinking to a ten-year low of 43%.

Results by High School Program. Students admitted to the New Jersey public higher education system are diverse, not only in terms of their age and the year of their high school graduation, but also in the type of high school programs they took prior to college. According to the students' self-reports, 73% of the 1990 high school graduates came from an "academic" or college preparatory program (See Table 15). The other program types included "general" (19%), "career oriented," i.e., business, vocational or industrial arts (7%), and other (1%). These percentages are virtually unchanged from 1989.

The college basic skills proficiency of students in these subgroups who come from New Jersey high schools varies considerably. Table 6B displays the verbal skills proficiency results for each of the high school programs by high school type (public or private). Several findings emerge from Table 6B. First, it is clear that the recent graduates from "academic" programs have considerably better reading and writing skills than students who elected other programs, regardless of whether their schools were public or private. Second, it is also clear that only 35% of the "college-prep" students appeared proficient in verbal skills (up 2 percentage points from last year), and at least 21% (2 percentage points worse than last year) would need remedial reading/writing in college. Third, students from private schools who selected the "general" high school program were seemingly much better prepared for college than those selecting the "general" program in public schools. However, the number of private school students from "general" programs was small (393).

The Basic Skills Council believes that the rudimentary skills tested by the NJCBSPT should be attained by all high school graduates--regardless of whether they elect "academic" or "vocational" tracks. Moreover, the Council continues to discover large numbers of "non-academic" track high school graduates in the freshman cohorts of New Jersey's colleges.

Results by Category of High School. Results were analyzed for the first time this year by category of high school. In addition to comparisons of the performance of recent graduates from public vs. private schools, comparisons of "QEA" vs. non-QEA school districts were made. The category of QEA schools was defined in accordance with outcome of a longstanding controversy in New Jersey over equity in school funding formulas. In 1990 the state legislature passed the Quality Education Act (QEA) which defined "special needs" school districts as those inequitably funded by the state in the past, and directed that increased funding be allocated to these districts in the future. The analyses in this report precedes any funding enrichment and can serve as baselines against which to measure future changes in the college-going population.

Table 6C presents the skills proficiency breakdowns for public/private and QEA/non-QEA school district categories. QEA private schools is an artificial category formed by grouping together the private schools geographically located in QEA public districts. These results are presented in order to provide baseline data against which to measure future change as the QEA public school districts receive dramatically increased state funding in future years.

The results in Table 6C lend themselves to multiple comparisons. The first-order comparisons yield the following observations:

- Fewer private school graduates, compared to public school graduates, were in the "Lack Proficiency" category in verbal skills (27% vs. 34%). Private school graduates also have higher percentages in the "Appear Proficient" category. Thus private school students appear better prepared overall in verbal skills. Recall, however, the finding from Table 6B that this apparent advantage for the private schools does not appear to derive from public school "academic" program participants' deficiencies but rather from the deficiencies among "general" program public school test-takers.
- Public school graduates, on the other hand, appear to have an advantage in computation proficiencies, as well as a smaller advantage in elementary algebra proficiencies. The "Lack Proficiency" category is 6 percentage points smaller for the public school grads (34% vs. 40%) than for private school graduates. In elementary algebra, the public/private difference is 2 percentage points in the "Lack Proficiency" category (43% vs. 45%) and 3 percentage points in the "Appear Proficient" category (21% vs. 18%).
- Within the public schools, the 30 QEA districts' high schools sent the colleges students whose basic skills proficiencies were significantly below those of non-QEA public schools in each skill area. Approximately half of the QEA graduates would likely be enrolled in remediation in each skill area, as displayed in Table 6C.

Statistical Interactions. Private schools geographically located in the same towns as public QEA districts (although not eligible for state funding) were analyzed so that comparisons and "interaction" effects could be studied within school types. One possible interaction would be the question of whether an observed advantage (to public or to private) was present equally in QEA vs. non-QEA areas. When the size of the "Lack Proficiency" categories by school type (public/private) and district category (QEA/non-QEA) are compared several statistically significant interactions were observed.

In verbal skills:

- Private school graduates of schools located in QEA districts appeared to be better prepared than graduates from QEA public schools (19 percentage point difference [37 vs. 56%] in the "Lack Proficiency" category).
- Private school graduates in non-QEA districts appeared to be better prepared than non-QEA public school graduates (7 percentage point difference [23 vs. 30%] in the "Lack Proficiency" category), but the advantage was smaller than noted above in "within QEA" district comparisons.

In mathematics:

- Public school graduates appeared better prepared in computation than private school graduates. The difference in the "Lack Proficiency" category was 7 percentage points (31 vs. 38%) and was confined to the non-QEA areas. The difference was only 1 percentage point in the QEA areas.
- In elementary algebra, public schools and private schools differed by 1 percentage point in the "Lack Proficiency" category, both in QEA and Non-QEA districts.

The differences noted here between outcomes of public and private school graduates may not be attributable solely to differences in educational services. The populations of students who enter each school type may be different at entrance. These entry differences cannot be controlled for in this report. It should also be noted that all such sub-group comparisons cannot accurately reflect on the **entire** cohort of either public or private high school graduates. Many students graduating from New Jersey's high schools go to out-of-state colleges. *The results presented here accurately reflect the skills picture of only those students who came to New Jersey colleges that use the NJCBSPT.*

Estimates using the most recent data indicate that approximately 28% of all New Jersey public QEA high school graduates took the NJCBSPT and 37% of all NJ private QEA-located school graduates took the placement test. Only by including all graduates in the testing process could reasonable comparisons be made among individual school or district performances. Assuming that in-state college-going rates do not change dramatically in the near future, the data presented here will serve as a reasonable baseline against which to measure future changes in the skills patterns of the recent high school graduates who take the NJCBSPT.

High School Mathematics and College Proficiency. The traditional mathematics preparation for college is at least three years of high school courses, including Algebra I, II and Geometry. Course variations, however, exist in high school curricula. Many students take a fourth year of high school mathematics, but only a minority (about 11% of the recent graduates tested) report taking calculus during this fourth year. Tables 6D and 6E display the relationship between high school mathematics curricula and subsequent proficiency levels on the NJCBSPT Computation (Table 6D) and Elementary Algebra (Table 6E) subtests. (Tables 6D and 6E include only New Jersey graduates who reported that their best language was English.) The data, as in previous years, indicate that the groups of students who took fewer than four years of mathematics are highly unlikely to exhibit proficiency in elementary algebra. For example, in Table 6E, course category #2 includes the 1,586 students who took only one year of algebra in high school. Of these, only 125 students scored high enough to "Appear Proficient in Some Areas" in elementary algebra and **no** students scored high enough to reach the "Appear Proficient" category. In category #5, of the students who took the typical "college prep" program of Algebra I, II and Geometry, only 6% "Appeared Proficient" in elementary algebra. Of 7,204 students in this category, only 396 answered 25 or more of 30 elementary algebra questions correctly. In category #9, students who completed a "college prep" sequence that included calculus were much more likely to "Appear Proficient" (73%) in elementary algebra. Table 13 indicates that Rutgers and NJIT together enrolled 47% (2,357 of 5,056) of all the tested students who took calculus in their high school curriculum.

Three generic levels of preparation emerge from the course categories in Tables 6D and 6E. First, students who have completed two (or fewer) years of mathematics have almost a zero chance of "Appearing Proficient" in elementary algebra. Presumably, these students emerged from "non-academic" high school tracks. Second, students who completed Algebra I & II, Geometry and Trigonometry (category 6) have approximately a 30% chance of "Appearing Proficient" in elementary algebra. Finally, students who complete four years of mathematics including calculus have almost three chances in four of "Appearing Proficient" in elementary algebra. The NJCBSPT Elementary Algebra subtest is composed of direct questions on algorithmic skills typically learned in the ninth grade. These data suggest that not only are the recent statewide efforts to "define" topics for high school mathematics syllabi warranted but also that reasonable standards for student accomplishment should also be pursued vigorously.

It should be noted that the study of calculus is not necessarily the causal variable in ensuring proficiency in elementary algebra. It is probably true that only the best prepared students from the three-year high school mathematics sequence elect calculus. However, students who take senior mathematics courses other than calculus also display slightly higher algebra proficiencies than the students completing only the three-year sequence. The Council would like to see a strengthening of all mathematics instruction -- concentrating on arithmetic through elementary algebra -- so that more students will be sufficiently prepared to elect the fourth year of high school mathematics, regardless of their post-secondary intentions.

Non-recent High School Graduates

Of all students tested this year, about 40% either graduated before 1990, did not graduate (3%) or did not respond (4%) to the question. Graduates from 1990 as a percentage of total test-takers declined by 4 percentage points compared with those of 1989. Non-recent graduates increased proportionately. As can be seen in Table 11, 22% of the test-takers indicated that they graduated before 1988. Of the 19,753 non-recent high school graduates, 16,671 or 84% were tested at the community colleges. Compared with recent graduates in Table 15, the older students tend to elect part-time attendance status (52% vs. 8%) and are much less likely to have taken a "college-prep" program while they were in high school (41% vs. 73% of recent graduates). In addition, they were much more likely to have taken "General Math" or "Business Math" instead of Algebra, Geometry or Trigonometry while in high school. This reaffirms the Council's observation that significant numbers of non-college bound students eventually enroll in the state's postsecondary institutions.

The NJCBSPT proficiencies of the non-recent graduates lagged far behind those of recent graduates. As can be seen in Table 7, 46% of the older group lacked proficiency in verbal skills, 59% lacked proficiency in computation, and 78% were seriously deficient in elementary algebra skills. Test-takers who graduated high school before 1988 were slightly more proficient in verbal skills than 1988 and 1989 graduates. However, the older students were less likely to be competent in elementary algebra. The vast majority of pre-1988 graduates (84%) would likely be placed into remedial or developmental algebra instruction at the colleges.

The large numbers of older students who need skills assistance pose a challenge, particularly to the community college sector where the majority enroll. Both academic advisement strategies and faculty sensitivity to adult learning styles must be appropriately matched to the non-recent graduate.

Proficiencies By Gender

The data in Table 8 indicate that women outnumber men in every college sector except NJIT. Table 9 presents the skills proficiencies by gender and college sector. In every sector (except NJIT) women display better verbal skills (i.e., lower percentages in the "Lack Proficiency" category, higher percentages in the "Appear Proficient" category). Men evidence higher proficiencies in both computation and elementary algebra than women (slightly more so in computation than in algebra).

The pattern described above is not surprising; it has been noted in most major testing programs, including the SAT and the ACT as well as many state K-12 assessments. However, the availability of background information on high school mathematics course-taking patterns in the present report permits a further analysis. When recent male and female graduates are matched on self-reported mathematics course-taking patterns, the gender differences found in elementary algebra for the population as a whole are eliminated. Table 9A displays elementary algebra proficiencies by gender for four typical "college-prep" mathematics course-taking patterns. The results follow the general pattern noted in Table 6D in that four years of preparation, particularly where the fourth year is calculus, result in far higher proficiencies than three years of preparation (i.e., Algebra I, II, and Geometry). What is of interest in Table 9A, however, is the fact that women's proficiencies equal those of men in three of the four course patterns, and slightly exceed those of men in the four-year mathematics, non-calculus category. Further, it should be noted that the proportion of men and women who elect to take a fourth year of mathematics is about equal. Women are no more likely to avoid senior mathematics or calculus than men. However, neither gender elects to take a fourth year of high school mathematics in great proportion. Table 15 displays the fact that of all 1990 high school graduates only 14% report having taken calculus and 13% report having taken a senior-year "academic" mathematics course.

High School Homework: A Factor in Proficiency

Students were asked to categorize the amount of time they spent per week in high school doing homework requiring reading, writing and mathematics. In all three disciplines, the typical response from students was one to three hours per week. In contrast, students admitted to Rutgers and NJIT reported spending on average several more homework hours.

The amount of time students spend on homework was found to have a positive relationship to the test results. Students who spent four or more hours per week on homework were much more likely to score above the "Lack Proficiency" category than were students who spent an hour or less per week on homework in each discipline. Thus while homework time is certainly not the only factor related to adequate academic preparation, it is one of the necessary conditions.

Students for Whom English is a Second Language

Six percent of the test-takers reported that English was not their best language and 19% (a ten-year high) said that they spoke a language other than English at home (Table 14). Ninety percent or more of the students tested in each sector reported that English

was their best language. Greater percentages of students at Rutgers (28%) and NJIT (46%) than in the other sectors reported that they speak a second language at home. Three percent of the students tested indicated that they had completed an ESL program and an additional 2% reported still being enrolled in one.

The Basic Skills Council's policy is to defer the testing of students for whom English is a second language until they complete their postsecondary ESL instruction.

DISSEMINATION OF NJCBSPT RESULTS

To Colleges

Since a central purpose of the NJCBSPT is to aid in placement of students into appropriate freshman courses prior to registration, the colleges are provided with summary reports six times during the testing year. During the peak testing period (summer), essays are read weekly (by two trained readers) and colleges can arrange for weekly reporting of results.

To Students

The *Information Bulletin* (see Appendix A) contains up-to-date information about the test along with sample test questions. Sufficient quantities of these bulletins are sent to the colleges for distribution to students prior to their taking the test. ETS mails individual student reports (scores) to the colleges. The institutions then inform the students of the results and use the NJCBSPT results as well as other student data for placement.

To High Schools

In the spring, the accumulated results of each high school's alumni are sent in aggregate form and by individual student scores (for the students who indicated permission on the test's answer sheet). The report to the principals contains an analysis of responses to each test question (e.g., the percentage of the class that was successful). In addition, a copy of this statewide report with a cover letter from the New Jersey School Boards Association is sent to each school board chairperson.

To the Board of Higher Education and the Higher Education Community

This statewide report is provided not only to the Board of Higher Education but also to all public and private institutions in New Jersey, to other state higher education agencies, and upon request to other interested parties.

To Interested Citizens

This and other College Basic Skills Assessment Program publications (see inside back cover) are available without charge to New Jersey citizens. In addition, program staff are available to speak to school boards and disseminate information through such organizations as the Public Education Institute, the Education Commission of the States, The ERIC Network and other professional organizations.

OUTCOMES OF SKILLS-DEFICIENT STUDENTS WHO ENROLL IN COLLEGE REMEDIATION

The present report is one of a series that the Basic Skills Council presents to the Board of Higher Education. The follow-up to this report is the *Report on the Effectiveness of Remedial Programs, The New Jersey Public Colleges and Universities*, a two-year analysis of the outcomes of the students who are placed into over a hundred remedial programs throughout the state. Many severely deficient students require three to four semesters to complete their remedial work. Outcomes data for the students tested and reported on here will be collected in August 1992.

Reports on previous two-year cohorts have indicated that for those underprepared students who complete their college's prescribed remedial sequence, their skills are upgraded to a level where they can be retained within, and hence profit from, higher education. Those students completing remediation across all skill areas exhibit two-year retention rates similar to or higher than non-remedial students. In subsequent college-level courses that assume proficiency in the skills just remediated, students who complete remediation generally pass the courses at rates similar to non-remedial students. In contrast, the "successful survival rate" (a measure combining retention with the percentage of students who have a C or better average) of students who needed but did not complete remediation is only about a third that of those students who completed remediation. The Basic Skills Council's *Report on the Effectiveness of Remedial Programs in New Jersey Public Colleges and Universities*, (see back cover) contains a full description of these results.

Beginning with the students who entered in Fall 1987, those exiting college remedial programs were re-tested with an alternate form of the NJCBSPT. The expectation is that the preponderance of such students in a given program will, on re-test, reach or exceed their college's placement minimums for entry into the college-level writing and mathematics courses. Such re-testing is not intended to be the only measure used only determine whether a student moves on to the college-level course. Faculty judgment on course grades and examinations, not merely the NJCBSPT score, continues to determine whether individual students move into college-level courses. The Basic Skills Council monitors the results in terms of percentages in each program who reach the minimum standard. This re-test performance, in aggregate form, is one of the multiple indicators the Basic Skills Council uses to assess the effectiveness of public college remedial programs.

RECOMMENDATIONS

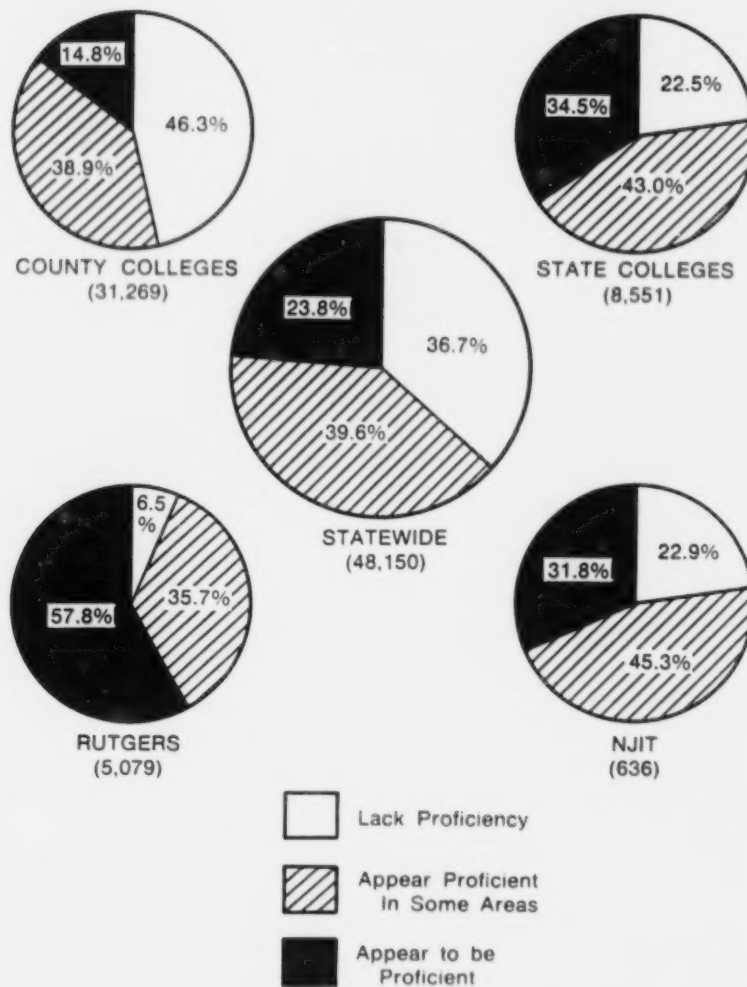
Many college school academic collaborations currently function well in New Jersey. If New Jersey is to realize an improvement in the reading, writing and mathematics proficiencies of our recent high school graduates, the Council suggests that work on these subject areas increasingly should be the focus of such college-school relationships. The potential for greater collaboration is heightened now that new state tax revenues will be allocated to the QEA school districts whose college-going graduates' scores are so frequently in the Council's "Lack Proficiency" categories.

Because large numbers of students from non-academic high school programs enter New Jersey's higher education system each year, the Basic Skills Council urges the Chancellor, the Board of Higher Education and individual colleges to accelerate their efforts to create and fund expanded academic linkages between the schools and our colleges. It is the Council's hope that college-level skills expectations can be more clearly delineated for students, *including those in the non-academic high school programs who so often choose to enroll in our community colleges.*

The Basic Skills Council recommends that the Departments of Education and Higher Education develop in the next year a formal plan of research that will begin to explore the relationships between the NJCBSPT and the recently field-tested 11th grade High School Proficiency Test (HSPT).

The Basic Skills Council recommends that the Department of Higher Education continue to support the development of a revised NJCBSPT to be in place for the fall of 1993, the year in which the 11th grade HSPT will begin to "count" for high school graduation, and the year in which the Preliminary Scholastic Aptitude Test (PSAT) will begin to reflect the changes in the new Scholastic Aptitude Test (SAT) from the College Board. New advances in measurement theory and approaches to testing and reporting proficiencies are being developed around the nation. The Council recommends that the NJCBSPT be maintained as an instrument of the highest quality and that it be revised for 1993 in concert with the changing academic expectations and measurement methodologies.

FIGURE 1
Levels of Student Proficiency by Sector
Fall 1990
Verbal*



*Based on Total English composite score (Reading Comprehension, Sentence Sense and Essay).

FIGURE 2
Levels of Student Proficiency by Sector
Fall 1990
Computation

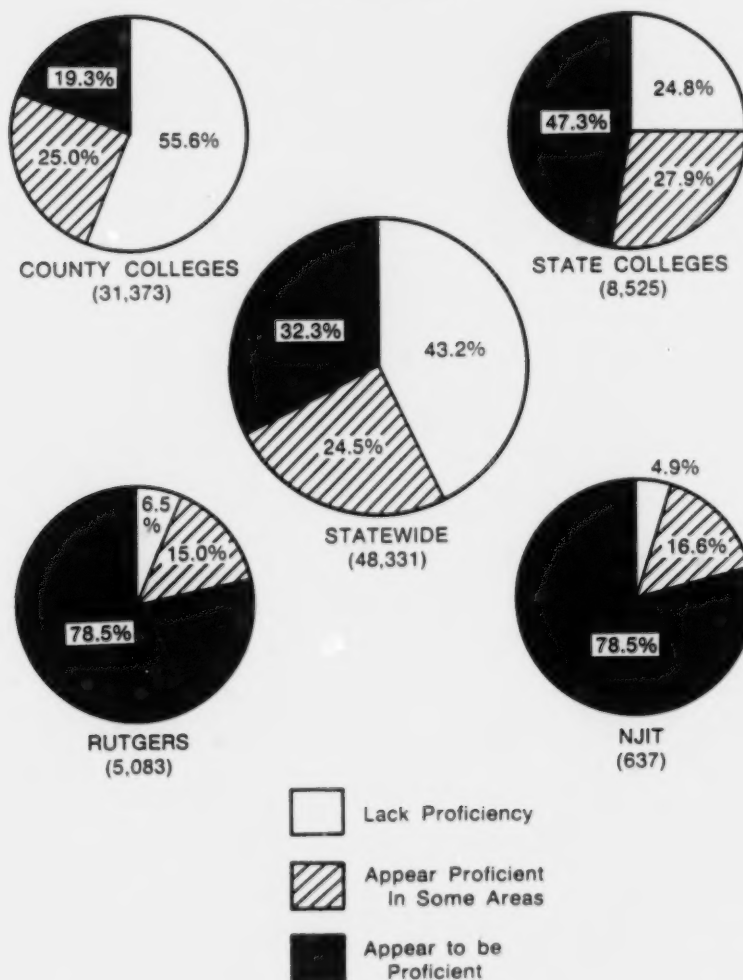


FIGURE 3
Levels of Student Proficiency by Sector
Fall 1990

Elementary Algebra

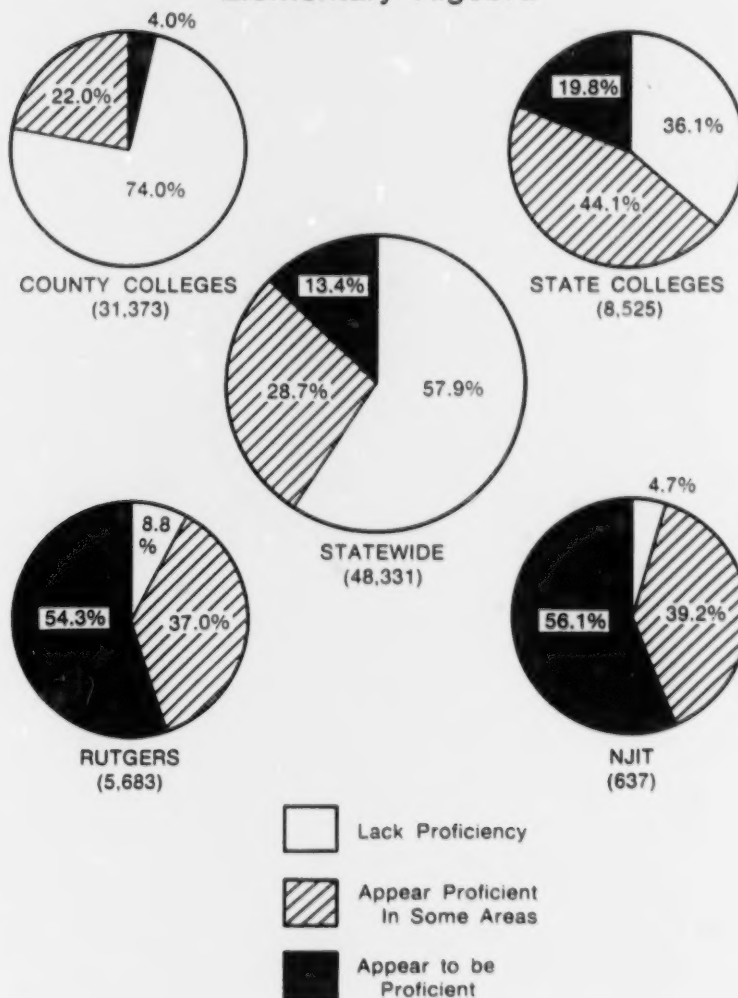
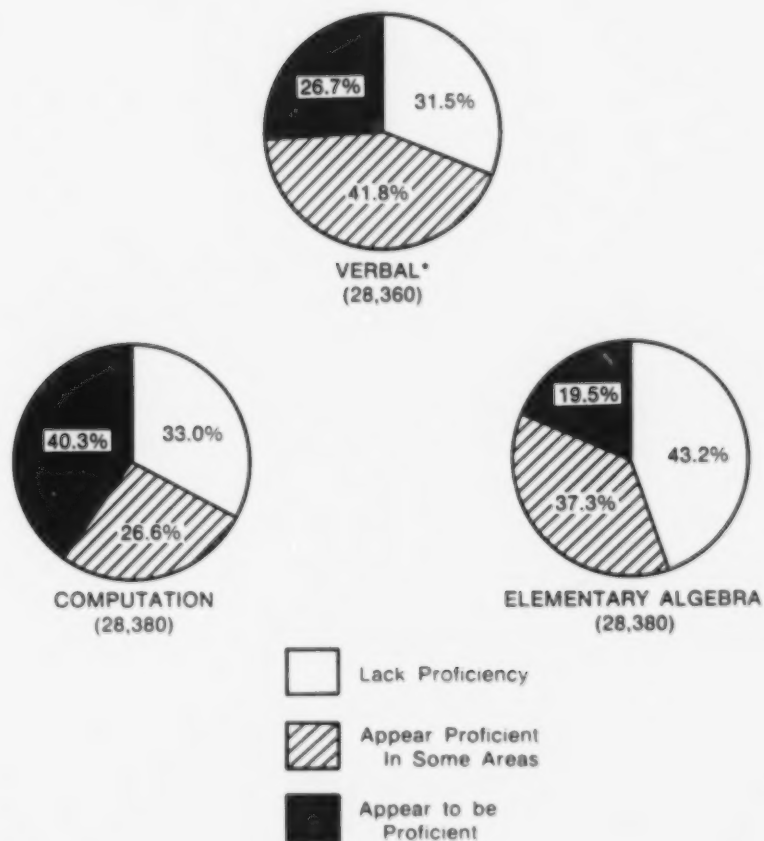


FIGURE 4
Levels of Student Proficiency by Skill Area
All Recent High School Graduates
Fall 1990



*Based on Total English composite score (Reading Comprehension, Sentence Sense and Essay).

1990 N.J. HIGH SCHOOL GRADUATES

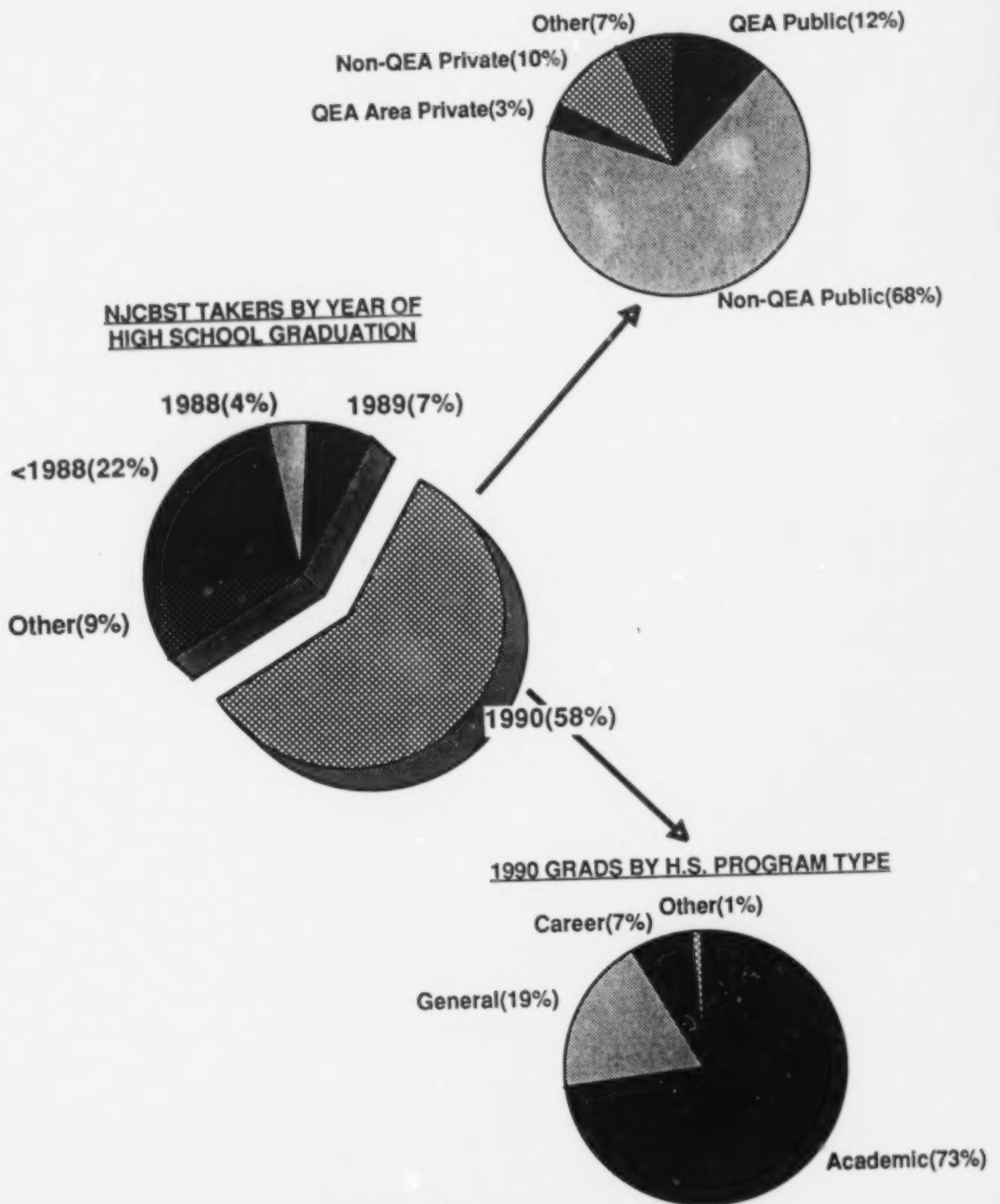


Figure 5
21

TABLE 1*
Ten Year Comparison of Statewide Test Results¹
1981 - 1990

	1981	1982	1983	1984	1985	1986	1987	1988	1989		1990	
Number of Students Tested	49,833	51,135	51,321	46,465	44,344	44,284	42,603	48,358		48,791		48,568
	%	%	%	%	%	%	%	%	%	#	%	#
VERBAL												
Lack Proficiency	32	31	31	33	34	33	34	33	35	16,966	37	17,652
Appear Proficient in Some Areas	41	41	40	41	40	41	40	41	41	19,593	40	19,045
Appear to be Proficient	27	27	29	26	26	27	27	26	24	11,480	24	11,453
COMPUTATION												
Lack Proficiency ²	44	46	45	47	44	47	46	47	45	21,651	43	20,887
Appear Proficient in Some Areas	25	22	25	25	24	23	23	23	24	11,634	26	11,840
Appear to be Proficient	30	32	30	28	32	30	31	30	31	15,106	32	15,604
ELEMENTARY ALGEBRA												
Lack Proficiency ²	62	61	60	60	59	60	57	59	58	28,207	58	27,978
Appear Proficient in Some Areas	27	28	28	28	29	26	29	26	28	13,600	29	13,869
Appear to be Proficient	11	11	12	12	12	15	15	15	14	6,584	13	6,484

*Includes students who were admitted but who may not have enrolled in college after being tested. Students from the participating independent colleges are included in the statewide totals. (See Appendix B for a list of these colleges.) Total number of students tested exceeds subtotals by skill area because some students do not complete all sections of the test.

¹See Appendix D for a description of proficiency categories.

²Includes those students not attempting this portion of the test.

TABLE 1A
NJCBSPT Mean Scaled Scores
Statewide
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Number of Students Tested	49,833	51,135	51,321	46,465	44,344	44,284	42,603	48,358	48,791	48,568
MEAN SCALED SCORES:										
Reading Comprehension (Standard Deviation)	163 (12.7)	163 (12.7)	163 (12.9)	161 (13.2)	161 (13.0)	161 (13.2)	161 (13.4)	161 (13.3)	160 (13.1)	161 (13.2)
Sentence Structure/Sense (Standard Deviation)	164 (11.9)	165 (11.5)	165 (11.5)	164 (11.6)	164 (11.6)	164 (11.6)	164 (11.8)	164 (11.6)	164 (11.4)	164 (11.3)
Essay (Standard Deviation)	6.7 (2.0)	6.9 (2.0)	6.5 (2.1)	7.0 (2.0)	7.1 (1.9)	7.0 (1.9)	6.9 (2.0)	7.1 (1.8)	7.3 (1.9)	7.0 (1.8)
Composition ¹ (Standard Deviation)	164 (11.5)	165 (10.9)	165 (10.7)	165 (10.9)	165 (11.1)	165 (11.2)	165 (11.4)	165 (11.0)	165 (10.8)	164 (10.6)
Total English ² (Standard Deviation)	164 (11.9)	164 (11.6)	164 (11.5)	163 (11.5)	163 (11.6)	164 (11.8)	163 (11.8)	163 (11.6)	163 (11.2)	162 (11.2)
Math Computation (Standard Deviation)	164 (11.0)	165 (10.7)	165 (10.5)	165 (10.5)	165 (10.5)	165 (10.5)	166 (10.5)	165 (10.5)	165 (10.1)	166 (10.1)
Elementary Algebra (Standard Deviation)	166 (12.4)	166 (11.7)	167 (11.8)	167 (11.6)	167 (11.7)	167 (11.9)	168 (11.8)	166 (12.3)	166 (12.3)	166 (12.4)

¹Composition is a composite score based on Sentence Structure/Sense and Essay.

²Total English is a composite score based on all three reading and writing sections.

TABLE 2

Ten Year Comparison of Sector Test Results¹County Colleges
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Number of Students Tested	30,073	30,380	30,677	28,191	26,288	26,322	24,117	29,209	30,157	31,472
	%	%	%	%	%	%	%	%	%	%
VERBAL										
Lack Proficiency	42	41	42	44	45	43	46	44	47	46
Appear Proficient in Some Areas	40	40	40	40	40	40	39	41	40	39
Appear to be Proficient	18	19	18	16	16	16	15	16	13	15
									#	#
COMPUTATION										
Lack Proficiency ²	56	58	58	60	58	61	62	61	59	56
Appear Proficient in Some Areas	25	21	24	23	24	23	22	22	24	25
Appear to be Proficient	20	21	18	17	19	16	16	17	17	19
ELEMENTARY ALGEBRA										
Lack Proficiency ²	78	77	76	76	77	77	76	77	77	74
Appear Proficient in Some Areas	18	19	20	20	20	18	20	19	19	22
Appear to be Proficient	4	4	4	4	4	5	4	4	4	4

¹See Appendix D for a description of proficiency categories.²Includes those students not attempting this portion of the test.

TABLE 2A
NJCBSPT Mean Scaled Scores
County Colleges
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Number of Students Tested	30,073	30,380	30,677	28,191	26,288	26,322	24,117	29,209	30,157	31,472
MEAN SCALED SCORES:										
Reading Comprehension (Standard Deviation)	161 (13.3)	160 (13.3)	159 (13.4)	158 (13.4)	158 (13.1)	158 (13.5)	157 (13.5)	158 (13.4)	157 (13.1)	158 (13.3)
Sentence Structure/Sense (Standard Deviation)	161 (12.3)	162 (11.9)	162 (12.0)	161 (11.9)	161 (11.8)	161 (11.9)	161 (12.1)	161 (11.7)	161 (11.4)	162 (11.3)
Essay (Standard Deviation)	6.2 (2.0)	6.5 (2.0)	6.0 (2.1)	6.6 (2.0)	6.7 (1.9)	6.6 (1.9)	6.4 (2.0)	6.7 (1.8)	6.9 (1.9)	6.6 (1.8)
Composition ¹ (Standard Deviation)	161 (11.8)	162 (11.2)	162 (10.8)	162 (11.0)	162 (11.2)	162 (11.3)	161 (11.3)	162 (11.0)	162 (10.6)	162 (10.5)
Total English ² (Standard Deviation)	161 (12.3)	161 (12.0)	161 (11.6)	160 (11.5)	160 (11.5)	160 (11.7)	160 (11.6)	160 (11.4)	160 (10.9)	160 (11.0)
Math Computation (Standard Deviation)	161 (11.0)	162 (10.6)	162 (10.1)	162 (10.1)	162 (10.2)	162 (10.1)	162 (10.1)	162 (9.9)	162 (9.5)	163 (9.7)
Elementary Algebra (Standard Deviation)	161 (10.6)	162 (10.2)	162 (9.9)	162 (9.7)	162 (9.8)	162 (9.8)	163 (9.8)	161 (10.0)	161 (10.0)	161 (10.3)

¹Composition is a composite score based on Sentence Structure/Sense and Essay.

²Total English is a composite score based on all three reading and writing sections.

TABLE 3

Ten Year Comparison of Sector Test Results¹
State Colleges
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>		<u>1990</u>	
Number of Students Tested	10,338	11,328	10,981	9,767	9,237	8,817	9,369	9,214	8,926		8,643	
	%	%	%	%	%	%	%	%	%	#	%	#
VERBAL												
Lack Proficiency	22	21	20	22	24	23	22	21	22	1,884	23	1,924
Appear Proficient in Some Areas	45	45	44	47	47	47	44	46	47	4,088	43	3,680
Appear to be Proficient	33	34	36	31	30	31	34	33	32	2,773	35	2,947
COMPUTATION												
Lack Proficiency ²	33	35	33	36	31	36	33	31	28	2,444	25	2,117
Appear Proficient in Some Areas	31	26	30	31	30	29	29	28	29	2,546	28	2,379
Appear to be Proficient	36	39	37	34	39	35	38	41	44	3,890	47	4,029
ELEMENTARY ALGEBRA												
Lack Proficiency ²	50	49	46	47	44	46	42	40	37	3,274	36	3,077
Appear Proficient in Some Areas	40	40	42	41	45	39	42	41	45	4,026	44	3,762
Appear to be Proficient	10	11	13	12	11	5	16	20	18	1,579	20	1,686

¹See Appendix D for a description of proficiency categories.

²Includes those students not attempting this portion of the test.

TABLE 3A
NJCBSPT Mean Scaled Scores
State Colleges
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Number of Students Tested	10,338	11,328	10,981	9,767	9,237	8,817	9,369	9,214	8,926	8,643
MEAN SCALED SCORES:										
Reading Comprehension (Standard Deviation)	165 (11.1)	165 (11.3)	166 (11.0)	164 (11.6)	163 (11.7)	164 (11.8)	164 (11.9)	164 (11.7)	164 (11.6)	164 (11.8)
Sentence Structure/Sense (Standard Deviation)	167 (10.0)	167 (9.9)	168 (9.8)	167 (10.0)	167 (10.2)	167 (9.9)	168 (9.8)	168 (10.1)	168 (9.5)	168 (9.6)
Essay (Standard Deviation)	7.2 (1.8)	7.3 (1.8)	7.0 (1.9)	7.4 (1.8)	7.4 (1.7)	7.4 (1.7)	7.3 (1.8)	7.4 (1.6)	7.7 (1.9)	7.5 (1.7)
Composition ¹ (Standard Deviation)	167 (9.6)	167 (9.5)	168 (9.2)	168 (9.4)	167 (9.7)	167 (9.6)	168 (9.8)	168 (9.6)	168 (9.4)	168 (9.3)
Total English ² (Standard Deviation)	167 (10.0)	167 (10.0)	167 (9.7)	167 (9.9)	166 (10.1)	166 (10.2)	166 (10.2)	167 (10.1)	166 (9.8)	167 (9.9)
Math Computation (Standard Deviation)	167 (9.6)	167 (9.4)	168 (9.2)	167 (9.3)	168 (9.2)	168 (9.3)	168 (9.1)	169 (9.1)	169 (8.7)	170 (8.4)
Elementary Algebra (Standard Deviation)	168 (11.2)	168 (10.7)	169 (10.8)	169 (10.5)	169 (10.3)	169 (10.7)	170 (10.7)	171 (11.0)	171 (10.8)	171 (11.1)

¹Composition is a composite score based on Sentence Structure/Sense and Essay.

²Total English is a composite score based on all three reading and writing sections.

TABLE 4

Ten Year Comparison of Sector Test Results¹Rutgers
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>		<u>1990</u>	
Number of Students Tested	6,559	6,219	6,251	5,856	6,550	6,753	5,573	5,712	5,849		5,085	
	%	%	%	%	%	%	%	%	%	#	%	#
VERBAL												
Lack Proficiency	9	9	6	7	7	7	7	6	7	387	7	329
Appear Proficient in Some Areas	35	39	30	33	33	32	30	30	33	1,939	36	1,813
Appear to be Proficient	56	53	64	60	60	61	63	64	60	3,518	58	2,937
COMPUTATION												
Lack Proficiency ²	15	13	10	10	9	11	11	9	8	472	7	332
Appear Proficient in Some Areas	21	18	18	20	18	19	17	17	16	957	15	760
Appear to be Proficient	64	69	72	70	72	70	72	74	76	4,420	79	3,991
ELEMENTARY ALGEBRA												
Lack Proficiency ²	19	18	14	13	13	13	13	12	11	642	9	457
Appear Proficient in Some Areas	43	45	39	39	44	36	35	32	37	2,182	37	1,879
Appear to be Proficient	38	37	47	48	43	51	52	57	52	3,025	54	2,743

¹See Appendix D for a description of proficiency categories.²Includes those students not attempting this portion of the test.

TABLE 4A
NJCBSPT Mean Scaled Scores
Rutgers
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Number of Students Tested	6,559	6,219	6,251	5,856	6,550	6,753	5,573	5,712	5,849	5,085
MEAN SCALED SCORES:										
Reading Comprehension (Standard Deviation)	170 (8.7)	170 (8.5)	171 (8.0)	170 (8.6)	170 (8.6)	170 (8.7)	170 (8.8)	171 (8.2)	170 (8.4)	171 (8.0)
Sentence Structure/Sense (Standard Deviation)	171 (8.3)	171 (8.6)	172 (7.1)	173 (7.1)	172 (7.2)	172 (7.3)	173 (7.3)	173 (7.0)	173 (6.7)	173 (6.5)
Essay (Standard Deviation)	7.9 (1.7)	7.8 (1.6)	7.9 (1.7)	8.2 (1.6)	8.2 (1.5)	8.2 (1.5)	8.2 (1.8)	8.2 (1.5)	8.4 (1.6)	8.0 (1.5)
Composition ¹ (Standard Deviation)	172 (8.2)	171 (7.6)	173 (7.3)	173 (7.3)	173 (7.7)	173 (7.7)	173 (8.1)	173 (7.5)	173 (7.3)	172 (7.1)
Total English ² (Standard Deviation)	172 (8.3)	171 (7.7)	173 (7.4)	172 (7.6)	172 (8.0)	173 (8.0)	173 (8.3)	173 (7.8)	173 (7.6)	172 (7.3)
Math Computation (Standard Deviation)	172 (7.8)	173 (7.3)	174 (6.8)	174 (6.8)	174 (6.7)	174 (7.0)	175 (6.9)	175 (6.6)	175 (6.3)	175 (5.7)
Elementary Algebra (Standard Deviation)	177 (10.9)	177 (9.7)	179 (9.6)	179 (9.3)	179 (9.6)	179 (9.4)	180 (9.4)	180 (9.2)	180 (9.1)	180 (8.8)

¹Composition is a composite score based on Sentence Structure/Sense and Essay.

²Total English is a composite score based on all three reading and writing sections.

TABLE 5

Ten Year Comparison of Sector Test Results¹NJIT
1981 - 1990

	1981	1982	1983	1984	1985	1986	1987	1988	1989		1990	
Number of Students Tested	679	722	599	541	497	472	489	555	656		638	
	%	%	%	%	%	%	%	%	%	#	%	#
VERBAL												
Lack Proficiency	14	15	15	20	23	19	24	20	25	165	23	146
Appear Proficient in Some Areas	42	43	42	38	43	42	41	41	43	279	45	288
Appear to be Proficient	44	42	44	43	33	39	35	39	32	210	32	202
COMPUTATION												
Lack Proficiency ²	5	4	5	8	5	6	11	6	8	52	5	31
Appear Proficient in Some Areas	13	11	13	17	14	16	14	16	19	123	17	106
Appear to be Proficient	82	85	82	75	80	78	75	78	73	481	79	500
ELEMENTARY ALGEBRA												
Lack Proficiency ²	3	5	4	6	4	4	8	6	7	45	5	30
Appear Proficient in Some Areas	40	37	35	38	43	30	34	34	45	293	39	250
Appear to be Proficient	57	58	61	56	52	66	58	60	48	317	56	357

¹See Appendix D for a description of proficiency categories.²Includes those students not attempting this portion of the test.

TABLE 5A
NJCBSPT Mean Scaled Scores
NJIT
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Number of Students Tested	679	722	599	541	497	472	489	555	656	638
MEAN SCALED SCORES:										
Reading Comprehension (Standard Deviation)	169 (10.1)	168 (10.2)	169 (10.2)	162 (11.5)	165 (12.0)	167 (10.4)	165 (11.6)	166 (11.3)	164 (12.1)	164 (12.1)
Sentence Structure/Sense (Standard Deviation)	169 (9.0)	170 (9.0)	170 (8.9)	169 (9.5)	168 (10.4)	169 (9.5)	168 (10.9)	169 (9.3)	168 (10.1)	168 (10.3)
Essay (Standard Deviation)	7.2 (1.7)	7.2 (1.7)	7.0 (1.9)	7.5 (1.9)	7.1 (1.8)	7.2 (1.6)	7.2 (1.9)	7.2 (1.7)	7.6 (1.8)	7.3 (1.7)
Composition ¹ (Standard Deviation)	169 (9.0)	168 (8.8)	169 (8.8)	169 (9.6)	167 (10.2)	168 (9.2)	167 (10.7)	168 (9.6)	167 (9.6)	168 (9.5)
Total English ² (Standard Deviation)	169 (9.3)	168 (9.2)	169 (9.2)	168 (10.3)	166 (10.7)	168 (9.7)	167 (10.9)	167 (10.1)	166 (10.3)	167 (10.1)
Math Computation (Standard Deviation)	175 (5.0)	175 (5.1)	176 (5.1)	175 (6.1)	175 (5.7)	176 (5.8)	175 (6.7)	176 (5.4)	175 (6.2)	176 (5.1)
Elementary Algebra (Standard Deviation)	182 (6.8)	182 (6.6)	183 (6.5)	181 (7.7)	182 (7.3)	183 (6.7)	181 (8.2)	182 (7.3)	181 (7.6)	181 (7.5)

¹Composition is a composite score based on Sentence Structure/Sense and Essay.

²Total English is a composite score based on all three reading and writing sections.

TABLE 6

Ten Year Comparison of Statewide Results for Recent High School Graduates¹

1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>		<u>1990</u>	
Number of Students Tested	30,540	31,964	32,236	28,466	27,291	27,447	28,169	30,883	30,179		28,399	
	%	%	%	%	%	%	%	%	%	#	%	#
VERBAL												
Lack Proficiency	28	26	26	29	29	28	28	28	29	8,763	32	8,922
Appear Proficient in Some Areas	44	45	43	44	43	43	42	43	44	13,129	42	11,855
Appear to be Proficient	28	29	31	28	28	29	30	29	27	8,213	27	7,583
COMPUTATION												
Lack Proficiency ²	38	39	38	38	35	39	38	39	35	10,532	33	9,370
Appear Proficient in Some Areas	27	23	26	27	26	25	25	24	26	7,856	27	7,560
Appear to be Proficient	35	38	36	35	39	36	37	37	39	11,764	40	11,450
ELEMENTARY ALGEBRA												
Lack Proficiency ²	50	50	48	47	46	46	44	46	45	13,554	43	12,274
Appear Proficient in Some Areas	35	36	35	37	38	33	36	33	36	10,872	37	10,573
Appear to be Proficient	15	14	17	16	16	20	20	21	19	5,725	20	5,533

¹See Appendix D for a description of proficiency categories; GED recipients are excluded from the table.²Includes those students not attempting this portion of the test.

TABLE 6A
NJCBSPT Mean Scaled Scores
Statewide Comparison of Recent High School Graduates*
1981 - 1990

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Number of Recent High School Graduate	30,540	31,964	32,236	28,466	27,291	27,447	28,169	30,883	30,179	28,399
Percent of Total Test Takers	61%	63%	63%	61%	62%	63%	66%	64%	62%	58%
TOTAL ENGLISH										
Number Completing Test	30,488	31,621	31,538	28,401	27,262	27,156	27,805	30,856	30,105	29,360
Not Attempted	52	46	192	65	29	291	83	27	74	39
Mean Score	165	165	166	165	165	165	165	165	165	165
Standard Deviation	10.8	10.3	10.2	10.5	10.5	10.7	10.8	10.7	10.3	10.4
MATH COMPUTATION										
Number Completing Test	30,415	31,856	31,661	28,438	27,274	27,406	27,844	30,859	30,151	28,380
Not Attempted	125	108	69	28	17	41	44	24	28	19
Mean Score	166	166	167	167	167	167	168	167	168	168
Standard Deviation	10.1	9.9	9.6	9.8	9.7	9.8	9.7	9.7	9.2	8.9
ELEMENTARY ALGEBRA										
Number Completing Test	28,499	29,754	29,995	27,134	25,742	26,055	26,902	30,121	29,561	27,958
Not Attempted	2,041	2,210	1,735	1,332	1,549	1,392	986	762	618	441
Mean Score	168	169	169	169	169	170	170	170	170	170
Standard Deviation	12.1	11.4	11.5	11.3	11.4	11.6	11.5	11.8	11.9	11.6

*For each year, the most recent high school graduates are those who graduated the spring prior to their enrollment in college.

TABLE 6B
1990 New Jersey High School Graduates*
Verbal Proficiency Categories by High School Program Type

<u>High School Program</u>	<u>n</u>	<u>Verbal Proficiency</u>		
		<u>Lacking Proficiency</u>	<u>Appear Proficient In Some Areas</u>	<u>Appear Proficient</u>
COLLEGE PREP		%	%	%
public	14,405	20	45	35
private	<u>2,998</u>	22	43	35
TOTAL	17,403	21	45	35
GENERAL				
public	3,837	57	34	10
private	<u>393</u>	45	42	13
TOTAL	4,230	55	34	10
BUS/VOC/IND ARTS				
public	1,649	61	33	6
private	<u>85</u>	60	37	4
TOTAL	1,734	61	33	6
GED	66	70	21	9
OTHER	<u>168</u>	70	20	10
SUB TOTAL	23,601			
Out of State, uncoded and/or Limited English	<u>4,798</u>			
All 1990 Graduates	28,399	32	42	27
All NJ H.S. Graduates		31	41	28

*Recent High School Graduates are those who graduated the spring prior to their enrollment in college. Limited English proficient students are excluded, as well as out-of-state graduates.

TABLE 6C*

**Proficiencies of 1990 NJ High School Graduates¹
By School Category**

	ALL PUBLIC 22,675	QEA PUBLIC 3,528	NON-QEA PUBLIC 19,147	ALL PRIVATE 3,796	QEA PRIVATE 960	NON-QEA PRIVATE 2,836	OTHER ³ 1,428	TOTAL 27,899
	%	%	%	%	%	%	%	%
VERBAL SKILLS								
Lack Proficiency	34	56	30	27	37	23	29	32
Some	40	31	42	42	38	44	39	42
Appear Proficient	26	13	28	31	24	33	32	27
COMPUTATION								
Lack Proficiency ²	34	49	31	40	48	38	34	33
Some	28	28	28	28	27	28	27	27
Appear Proficient	38	23	40	32	25	34	39	40
ELEM. ALGEBRA								
Lack Proficiency ²	43	56	41	45	57	42	44	43
Some	36	32	36	37	29	39	33	37
Appear Proficient	21	12	23	18	14	19	22	20

*Appendix D for description of proficiency categories.

¹GED recipients excluded.

²Includes those students not attempting this portion of the test.

³Uncoded, missing codes, etc.

TABLE 6D

Relationship Between Mathematics Courses Completed in High School and the Computation Proficiency¹ of the Students Tested: 1990 New Jersey Recent High School Graduates Only²

Course Category	Total No.	Lack Proficiency		Appear Proficient In Some Areas		Appear to be Proficient	
		No.	%	No.	%	No.	%
1. Business Math or General Math	1375	1166	85	193	14	16	1
2. Algebra I	1586	1136	72	370	23	80	5
3. Algebra I & Geometry	2342	1435	61	719	31	188	8
4. Algebra I & II	608	349	57	193	32	66	11
5. Algebra I, Geometry & Algebra II	7204	2634	37	2845	39	1725	24
6. Trigonometry (No Senior Math)	4533	610	13	1363	30	2560	57
7. Senior Math (No Trigonometry)	935	152	16	300	32	483	52
8. Algebra I & II, Geometry & Trigonometry	1291	79	6	284	22	928	72
9. Calculus (No Senior Math)	2624	64	2	295	11	2265	86
10. Senior Math & Calculus	564	17	3	54	10	493	87
Overall	23,062	7,642	33	6,616	29	8,804	38

¹See Appendix D for a description of proficiency categories.

²Recent high school graduates are those who graduated the spring prior to their enrollment in college. Limited-English-Proficient students are excluded.

TABLE 6E

Relationship Between Mathematics Courses Completed in High School and the Elementary Algebra Proficiency¹ of the Students Tested: 1990 New Jersey Recent High School Graduates Only²

Course Category	Total No.	Lack Proficiency		Appear Proficient In Some Areas		Appear to be Proficient	
		No.	%	No.	%	No.	%
1. Business Math or General Math	1375	1357	99	17	1	1	0
2. Algebra I	1586	1461	92	125	8	0	0
3. Algebra I & Geometry	2342	2021	86	314	13	7	0
4. Algebra I & II	608	419	69	181	30	8	1
5. Algebra I, Geometry & Algebra II	7204	3267	45	3541	49	396	6
6. Trigonometry (No Senior Math)	4553	716	16	2479	55	1338	30
7. Senior Math (No Trigonometry)	935	175	19	517	55	243	26
8. Algebra I & II, Geometry & Trigonometry	1291	95	7	551	43	645	50
9. Calculus (No Senior Math)	2624	58	2	649	25	1917	73
10. Senior Math & Calculus	564	12	2	108	19	444	79
Overall	23,062	9,581	42	8,482	37	4,999	22

¹See Appendix D for a description of proficiency categories.

²Recent high school graduates are those who graduated the spring prior to their enrollment in college. Limited-English-Proficient students are excluded.

TABLE 7*
1989-1990 Test Results Of Non-Recent Graduates¹

	<u>1989</u>		<u>TOTAL</u>		<u>Pre-1988 Grads</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
<u>VERBAL</u>						
Lack Proficiency	8,550	47	8,995	46	4,361	40
Appear Proficient in Some Areas	6,608	36	6,880	35	4,041	37
Appear to be Proficient	3,123	17	3,878	20	2,477	23
<u>COMPUTATION</u>						
Lack Proficiency ²	11,460	63	11,647	59	6,430	59
Appear Proficient in Some Areas	3,795	21	4,403	22	2,434	22
Appear to be Proficient	3,026	17	3,703	19	2,015	19
<u>ELEMENTARY ALGEBRA</u>						
Lack Proficiency ²	14,469	79	15,422	78	9,115	84
Appear Proficient in Some Areas	3,009	17	3,281	17	1,370	13
Appear to be Proficient	803	4	1,050	5	394	4

*Includes those who may not have enrolled in college after being tested.

¹See Appendix D for a description of proficiency categories; "non-recent" graduates are students whose diploma was received prior to this year of testing.

TABLE 8
Students Tested, Fall 1990, by Gender Within Sector

<u>Gender</u>	<u>Statewide*</u>		<u>County Colleges</u>		<u>State Colleges</u>		<u>Rutgers</u>		<u>NJIT</u>	
	#	%	#	%	#	%	#	%	#	%
Male	20,749	43	13,097	42	3,620	42	2,371	47	519	81
Female	25,405	52	15,571	49	4,965	57	2,714	53	114	18
No Response	2,414	5	2,804	9	68	1	0	0	5	1
TOTAL TESTED	48,568		31,472		8,643		5,085		638	

*Students from the participating independent colleges are included in statewide totals.

TABLE 9

PROFICIENCIES BY GENDER
AND COLLEGE SECTOR

		<u>MALE</u> 20,414					<u>FEMALE</u> 24,997				
		<u>Statewide</u>	<u>County</u>	<u>State</u>	<u>Rutgers</u>	<u>NJIT</u>	<u>Statewide</u>	<u>County</u>	<u>State</u>	<u>Rutgers</u>	<u>NJIT</u>
		%	%	%	%	%	%	%	%	%	%
<u>VERBAL</u>											
Lack Proficiency		40	51	27	8	21	35	44	22	6	26
Some Proficiency		38	37	42	36	47	38	39	39	33	38
Appear Proficient		22	13	31	56	32	27	17	40	62	36
<u>COMPUTATION</u>											
Lack Proficiency		38	49	24	5	4	49	63	29	9	10
Some Proficiency		26	28	28	12	17	25	24	30	22	33
Appear Proficient		36	23	48	84	79	26	13	41	70	57
<u>ELEM. ALGEBRA</u>											
Lack Proficiency		52	68	35	6	3	60	77	36	10	10
Some Proficiency		31	26	43	31	35	26	19	41	36	35
Appear Proficient		18	6	23	63	62	14	4	23	54	55

TABLE 9A
PROFICIENCIES IN ELEMENTARY ALGEBRA BY GENDER AND
HIGH SCHOOL MATHEMATICS COURSES COMPLETED
FOR 1990 GRADUATES

	ALGEBRA I, II & GEOMETRY	
	Men	Women
	(2,918)	(3,708)
	%	%
LACK PROFICIENCY	45	45
PROFICIENT IN SOME AREAS	49	50
APPEAR PROFICIENT	6	6

	ALGEBRA I, II, GEOMETRY & SENIOR MATH	
	Men	Women
	(368)	(481)
	%	%
LACK PROFICIENCY	21	14
PROFICIENT IN SOME AREAS	52	57
APPEAR PROFICIENT	26	29

	ALGEBRA I, II, GEOMETRY, TRIGONOMETRY & SENIOR MATH	
	Men	Women
	(596)	(639)
	%	%
LACK PROFICIENCY	9	5
PROFICIENT IN SOME AREAS	42	42
APPEAR PROFICIENT	50	53

	ALGEBRA I, II, GEOMETRY, TRIGONOMETRY & CALCULUS	
	Men	Women
	(1,296)	(1,266)
	%	%
LACK PROFICIENCY	2	2
PROFICIENT IN SOME AREAS	24	24
APPEAR PROFICIENT	74	74

TABLE 10

Students Tested, Fall 1990, by Anticipated Enrollment Status Within Sector

<u>Self-Reported Information</u>	<u>Statewide*</u>		<u>County Colleges</u>		<u>State Colleges</u>		<u>Rutgers</u>		<u>NJIT</u>	
	#	%	#	%	#	%	#	%	#	%
Full-Time	35,232	73	20,087	64	7,276	84	4,925	97	614	96
Part-Time	11,812	24	10,398	33	1,129	13	119	2	10	2
No Response	1,524	3	987	3	238	3	41	1	14	2
TOTAL TESTED	48,568		31,472		8,643		5,085		638	

*Students from the participating independent colleges are included in statewide totals.

TABLE 11

Students Tested, Fall 1990, by Year of High School Graduation

Self-Reported Information	Statewide*		County Colleges		State Colleges		Rutgers		NJIT	
	#	%	#	%	#	%	#	%	#	%
1990	28,815	59	14,801	47	6,639	77	4,749	93	594	93
1989	3,573	7	2,842	9	518	6	84	2	22	2
1988	2,011	4	1,670	5	239	3	41	1	17	1
Prior to 1988	10,879	22	9,534	30	936	11	157	3	12	3
Did Not Graduate	1,351	3	1,280	4	37	0	10	0	4	0
No Response	1,939	4	1,345	4	274	3	44	1	7	1
TOTAL TESTED	48,568		31,472		8,643		5,085		638	

*Students from the participating independent colleges are included in statewide totals; GED recipients included.

TABLE 12
Students Tested, Fall 1990, by High School Program

<u>Self-Reported Information</u>	<u>Statewide*</u>		<u>County Colleges</u>		<u>State Colleges</u>		<u>Rutgers</u>		<u>NJIT</u>	
	#	%	#	%	#	%	#	%	#	%
Academic	27,985	58	14,585	46	6,450	75	4,585	90	521	82
General	10,951	23	8,763	28	1,337	16	363	7	81	13
Career	5,616	12	4,960	16	424	5	60	1	15	2
GED	1,609	3	1,435	5	122	1	14	0	1	0
Other	802	2	686	2	59	1	24	0	5	1
No Response	1,605	3	1,043	3	251	3	39	1	15	2
TOTAL TESTED	48,568		31,472		8,643		5,085		638	

*Students from the participating independent colleges are included in statewide totals.

TABLE 13
Mathematics Courses Taken in High School, Prior to Fall 1990

<u>Self-Reported Information</u>	<u>Statewide*</u>		<u>County Colleges</u>		<u>State Colleges</u>		<u>Rutgers</u>		<u>NJIT</u>	
	#	%**	#	%	#	%	#	%	#	%
General Math	23,549	49	18,598	59	2,701	31	1,094	22	190	30
Business Math	9,287	19	7,556	24	1,005	12	319	6	47	7
Algebra I	37,400	77	23,049	73	7,488	87	4,144	82	549	86
Algebra II	28,952	60	14,692	47	6,947	80	4,755	94	594	93
Geometry	32,939	68	17,931	57	7,442	86	4,848	95	591	93
Trigonometry	14,032	29	5,124	16	3,524	41	3,821	75	494	77
Senior Academic	4,586	9	1,618	5	1,242	14	1,192	23	161	25
Calculus	5,056	10	1,228	4	1,129	13	2,082	41	275	43
No Response	1,633	3	1,043	3	252	3	60	1	14	2

*Students from the participating independent colleges are included in statewide totals.

**Percentages exceed 100 since students may take more than one math course in high school.

TABLE 13A

Ten Year History of High School Mathematics Courses Taken in High School

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MATH COURSES TAKEN IN HIGH SCHOOL ¹										
General Math	37	36	37	36	33	37	37	46	46	49
Business Math	18	17	17	16	16	17	17	20	19	19
Algebra 1	72	71	72	71	69	75	77	80	78	77
Algebra 2	53	55	56	56	56	59	63	62	61	60
Geometry	63	63	65	64	64	68	71	71	69	68
Trigonometry	24	26	27	27	28	30	33	31	31	29
Senior Academic	10	10	10	10	10	10	10	10	10	9
Calculus	7	8	9	9	10	10	11	11	11	10
No Response	n/a	n/a	2	3	6	5	2	2	3	3

¹Percentages exceed 100 since students may take more than one math course in high school.

TABLE 14

Background Data (in percent) of Students Tested Statewide, 1981-1990

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<u>SEX</u>										
Male	44	44	45	44	44	44	44	43	43	43
Female	55	54	54	54	54	54	54	56	53	52
No Response	1	2	1	2	2	2	2	1	5	6
<u>ENROLLMENT STATUS</u>										
Full-Time	78	77	78	75	74	74	77	75	74	73
Part-Time	20	21	21	22	22	22	21	23	23	24
No Response	2	2	4	2	3	4	2	2	3	3
<u>HIGH SCHOOL PROGRAM</u>										
Academic	60	61	62	61	62	61	63	62	60	58
General	19	18	18	19	18	19	19	20	21	23
Career	14	14	14	13	13	12	11	12	12	12
GED	4	4	4	3	3	3	3	3	3	3
Other	1	1	1	1	1	1	1	1	2	2
No Response	2	2	2	3	3	4	2	2	3	3
<u>UNDERSTAND ENGLISH BETTER THAN ANY OTHER LANGUAGE</u>										
Yes	n/a	n/a	92	91	88	90	92	92	91	90
No	n/a	n/a	5	5	5	5	5	5	6	6
No Response	n/a	n/a	3	4	7	5	3	3	4	4
<u>SPEAK LANGUAGE OTHER THAN ENGLISH AT HOME</u>										
Yes	n/a	n/a	15	15	16	15	16	17	17	19
No	n/a	n/a	84	82	79	81	82	81	80	78
No Response	n/a	n/a	1	2	5	4	2	2	3	3
<u>ESL PROGRAM</u>										
Completed	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3	3
Still Enrolled	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2	2
Not Needed	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	90	89
No Response	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	6

TABLE 15

Background Data (in percent) of Students Tested by Sector, 1990

	County (31,472)	State (8,643)	Rutgers (5,085)	NJIT (638)	Recent High School Grads (28,399)	Non-Recent H.S. Grads (19,753)
ENROLLMENT STATUS						
Full-Time	64	84	97	96	92	49
Part-Time	33	13	2	2	8	51
No Response	3	3	1	2	--	--
HIGH SCHOOL PROGRAM						
Academic	46	75	90	82	73	41
General	28	16	7	13	19	31
Career	16	5	1	2	7	19
GED	5	1	0	0	0	7
Other	2	1	1	1	1	3
No Response	3	3	1	2	0	--
UNDERSTAND ENGLISH BETTER THAN ANY OTHER LANGUAGE						
Yes	90	91	93	89	93	93
No	6	5	5	8	6	7
No Response	4	4	2	3	2	--
SPEAK LANGUAGE OTHER THAN ENGLISH AT HOME						
Yes	16	19	28	46	19	19
No	81	78	71	52	81	81
No Response	3	3	1	2	0	--
ETHNICITY						
Asian	3	4	15	22	6	4
Black	15	14	11	12	11	21
Hispanic	7	10	10	14	8	9
White	66	66	59	45	70	63
Other	3	2	2	3	2	3
No Response	6	6	4	5	3	--

TABLE 15A

Background Data (in percent) of Students Tested by Sector, 1990

	<u>County</u> (31,472)	<u>State</u> (8,643)	<u>Rutgers</u> (5,085)	<u>MJIT</u> (638)	<u>Recent High School Grads</u> (28,399)	<u>Non-Recent H.S. Grads</u> (19,753)
<u>ESL PROGRAM</u>						
Completed	4	2	2	7	3	4
Student Enrolled	2	2	1	3	1	2
Not Needed	88	93	95	87	93	94
No Response	7	5	2	3	3	--
<u>MATH COURSES TAKEN IN HIGH SCHOOL</u>						
General Math	59	31	22	30	37	64
Business Math	24	12	6	7	14	26
Algebra 1	73	87	82	86	86	65
Algebra 2	47	80	94	93	75	39
Geometry	57	86	95	93	82	48
Trigonometry	16	41	75	77	38	16
Senior Academic	5	14	23	25	13	5
Calculus	4	13	41	43	14	5
No Response	3	3	1	2	0	--
<u>WANT HELP TO IMPROVE</u>						
Math	43	37	30	27	37	44
Reading	12	12	12	20	11	13
Study Habits	39	39	36	44	41	35
Writing	24	27	31	40	24	27
No Response	18	20	24	17	18	--

APPENDIX A

Description of the New Jersey College Basic Skills Placement Test

One purpose of the NJCBSPT is to help determine which students admitted to college need remedial instruction in certain basic skills; that is, the test was designed to discover which of the entering students do not have the level of skills generally expected of college freshmen and deemed necessary for successful completion of their academic programs. Thus, the basic skills measured by the test are defined not as skills necessary to survive in the world (e.g., filling out applications, reading directions on medicine bottles, or the like) but as skills needed to read college textbooks, to write papers for classes, to solve computational and algebraic problems in classes and, indeed, to compete successfully in a technological society.

The portions of the NJCBSPT dealing with verbal and mathematical skills yield the following scores:

1. Reading Comprehension.
2. Sentence Sense.
- 3.* Essay.
4. Composition, a composite score based on the Sentence Sense and Essay sections.
5. Total English score, a composite score based on the Reading Comprehension, Sentence Sense, and Essay sections.
6. Computation.
7. Elementary Algebra.

A more detailed explanation of the test can be found in *Interpreting Scores on the New Jersey College Basic Skills Placement Test*. Similarly, further information concerning the Essay and the mathematics sections of the test can be found in *Scoring the Essays* and *Interpreting Mathematics Scores on the New Jersey College Basic Skills Placement Test*, respectively. All booklets are available from the Department of Higher Education (see inside back cover).

Reading Comprehension (47 questions, including 7 pre-test questions, 50 minutes)

The Reading Comprehension section measures students' ability to understand a written text, to extract the main idea from the text, and to draw appropriate inferences from it. Most, but not all, of the questions testing these skills are related to passages printed in the test book. The passages cover a variety of subjects and represent a variety of writing purposes and styles.

Students taking the test are expected to read the passages carefully and to know what the text actually says. Close reading and attention to detail are expected, as is attention to tone. Merely identifying or confirming facts contained in a passage is not emphasized. Instead, students are expected to be able to generalize about the ideas in the passage and the method of their presentation. They are also expected to be able to identify ideas found in the passage when those ideas are stated in different words and to understand and identify the assumptions made by the author and the implications of the text.

Sentence Sense (40 questions, including 5 pre-test questions, 35 minutes)

The Sentence Sense section uses two kinds of multiple-choice questions. The first requires students to identify faults in sentences and make appropriate corrections. The second asks students to rewrite sentences, much as they would do when editing their own writing.

The problems presented to the student for correction are concerned mainly with the structure and logic of sentences, not with grammar or punctuation. Questions deal with expressing ideas clearly and accurately, appropriately coordinating or subordinating ideas within sentences, and recognizing complete sentences. The types of questions used ask students either to identify problems and correct errors in sentences or to recast sentences to change structure or emphasis - tasks they might perform when they themselves write.

Essay (20 minutes)

The Essay measures whether a student can write unified paragraphs, can organize ideas, can develop a logical argument, can provide specific examples, can use complete

sentences, can spell, can punctuate, can interest the reader, can maintain a consistent tone, can express ideas precisely or can do a host of other things that go into writing a good essay.

Each student's essay is holistically scored by two faculty readers. Examples of "good," "mediocre," and "weak" essays are provided to students in the *Information Bulletin*.

Computation (35 questions, including 5 pre-test questions, 40 minutes)

The Computation section measures the ability to perform basic arithmetic operations and to apply the operations to the solution of problems that involve fundamental arithmetic concepts. The questions cover operations with whole numbers, operations with fractions, operations with decimals and percents, and arithmetic reasoning.

Elementary Algebra (35 questions, including 5 pre-test questions, 40 minutes)

The Elementary Algebra section measures the ability to perform basic algebraic operations and to apply the operations to the solution of problems that involve elementary algebraic concepts. It tests operations with real numbers, operations with algebraic expressions, elementary understanding of graphs of equations, and the ability to solve equations, inequalities, and word problems.

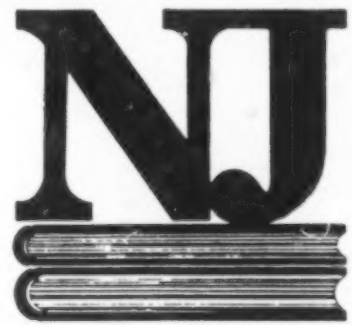
Changes in the Test

Since 1978, the NJCBSPT has undergone two significant revisions. For the first four years, a section on "Logical Relations" was included in the test. In 1982, this section was removed and several of the item types were embedded into the Reading Comprehension and Sentence Sense (formerly, Sentence Structure) sections.

In 1985, the Reading Comprehension section was shortened by 10 items in order to compensate for an observed "speededness" effect. For the NJCBSPT, a section is considered to be "speeded" if fewer than 90% of those sitting for the test reach the last item.

INFORMATION BULLETIN 1990-91

NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TEST



Purpose of the Test

Now that you have been admitted to a New Jersey public college or participating private college, you will need to take the New Jersey College Basic Skills Placement Test. This test is designed to provide information about your skills in the English language and in mathematics. The test results will be used, along with other information, to place you in the courses and sections appropriate to your level of preparation. In some cases those may be noncredit, developmental courses.

The test measures your skills in reading, writing, computation, and elementary algebra. The test administration requires 3 to 4 hours. With the exception of the 20-minute essay section, the test is made up entirely of multiple-choice questions.

Who Must Take the Test

The New Jersey Board of Higher Education requires that the following students take the test:

- full-time and part-time freshmen entering New Jersey public colleges (some private colleges have also chosen to participate in the testing program);
- students who have not already taken the test but who register for a course that would result in the accumulation of 12 or more credits; and
- transfer students who have not received transfer credit for freshman composition and mathematics.

However an institution may require additional categories of students to be tested. Students will be tested only *after* they have been admitted to a college. Students who already hold a bachelor's degree need not be tested. Students enrolled in a bilingual or English as a Second Language (ESL) program should not be tested until they have completed such a program. If you have any questions about taking this test, call or write the Test Administrator at your college.

No deberán examinarse los estudiantes que estén matriculados en programas bilingües o de inglés como segunda lengua hasta no terminar este curso de estudios. Para su información hay una versión en Español de los exámenes de calculación y álgebra elemental. Si tiene alguna pregunta sobre los requisitos de este examen, llame o escriba al Supervisor de Exámenes de su universidad.

Where and When the Test Is Given

The Basic Skills Placement Test is given at all New Jersey public colleges and participating private colleges. Your college will notify you where on campus the test will be administered and the date on which you are to take the test. Each college schedules the date and time for administering the test to its students.

Special Arrangements for Handicapped Students

If you have a visual, sensory, or orthopedic handicap or a temporary disability, such as a broken hand in a cast, that would prevent you from taking the test under standard conditions, you may request special accommodations and arrangements to take it on either a regularly scheduled test date or at a specially scheduled administration. No charge is made for these arrangements. For details, please contact the Test Administrator at your college.

What to Take with You on the Test Day

On the day of the test, be sure to take with you

1. Your Social Security Number
2. Several No. 2 lead pencils with erasers
3. A blue or black ballpoint pen for writing the essay

Testing Regulations

No books, dictionaries, calculators, or papers of any kind are allowed in the test room. Anyone who gives or receives help during the test, uses notes or books or papers of any kind, or removes test materials or notes from the room will not be permitted to continue the test. The college will invalidate any test score if there is any reason to question its validity.

Test Scores

This test yields scores in the following areas: Essay, Reading Comprehension, Sentence Sense, Composition, Total

English, Computation, and Elementary Algebra. Your test scores will be reported to your college, and your college will determine the procedures for communicating information about the test results.

Confidentiality

Data about you will not be used for other than counseling and placement purposes without your permission. If the data are used for research purposes, special procedures will be used to keep your identity confidential. If you have any questions about confidentiality, see your college's Test Administrator.

Questions and Answers about the NJCBSPT

- Q.** Why am I being asked to take this test?
- A.** The results of this test will help place you in courses for which you are best prepared. **Therefore, this test should be taken seriously.**
- Q.** Is this an admissions test?
- A.** No. The test has nothing to do with your being admitted to college. In fact, you will not take the test until *after* you have been admitted.
- Q.** I have not yet been admitted. Can I still take the test?
- A.** No. You will have to wait until you've been admitted to college.
- Q.** I have taken courses at another college. Do I need to take this test?
- A.** All students who have not taken this test must do so, unless they have received transfer credit for freshman composition and mathematics. Each college sets its own policies for testing transfer students.
- Q.** I have taken other standardized tests for credit or placement. Do I need to take this test, too?
- A.** Yes. The test is designed to give you and your college advisors information different from that provided by other tests.
- Q.** I am not sure whether or not I am required to take the test. What should I do?
- A.** The Basic Skills Test Administrator of your college will be able to answer your question.
- Q.** Why are you testing English?
- A.** Reading and writing skills are essential for success in college. You must read well enough to understand your college textbooks and write well enough to prepare term papers and answer questions on essay tests.
- Q.** Why are you testing mathematics?
- A.** Certain quantitative skills and mathematical concepts are necessary for success in many phases of

college-level work. These are the skills and concepts the test measures.

- Q.** How do I prepare for the test?
- A.** While the goal of the test is to assess your skills accumulated over time in reading, writing, and mathematics, a review of mathematics would help refresh those skills, particularly if you have not used them in a while. Review books available at book stores would be useful for this purpose.
- Q.** Suppose I don't do well on the test?
- A.** Your college will interpret the results of the test and determine which courses you are prepared to take. You may be required to take one or more Basic Skills courses.
- Q.** What are Basic Skills Courses?
- A.** Basic Skills courses will help you raise the level of your skills so that you can increase your chances for success in college. These courses do not earn credit toward graduation. They are prerequisites for taking college-level courses.
- Q.** I have completed high school. Shouldn't I be ready for college-level work?
- A.** Probably. But, if you have not had very much practice in writing essays or in careful reading or in basic mathematics, you still might benefit from special instruction.
- Q.** Will I have to pay a fee to take the test?
- A.** No. The State of New Jersey has provided funds for the development and the administration of the test.
- Q.** Where do I take the test?
- A.** Your college's Test Administrator will contact you about the place and time of testing.
- Q.** How do I find out how I did on the test?
- A.** Your college will inform you of the results.

Description of the Test

The first part of the test measures your skills in certain areas of English. It consists of three sections: Essay, Reading Comprehension, and Sentence Sense. These sections of the test are designed to measure your reading and writing skills to determine if you are prepared to *begin* regular college courses.

The second part of the test measures your quantitative and elementary algebra skills. It consists of two sections: Computation and Elementary Algebra.

The following paragraphs will tell you more about the English and mathematics sections of the test.

The Essay. You will be given 20 minutes to write an essay on an assigned topic. In general, your essay will be scored on how well you phrase your ideas and organize them, and whether you use specific examples to support your ideas. You are expected to follow the conventions of standard written English.

Reading Comprehension. 50 minutes, 47 questions. This section of the test measures how well you understand what you read. The questions will be based on information contained in the passages.

Sentence Sense. 35 minutes, 40 questions. This section of the test measures how much you know about the way parts of a sentence fit together and about the ways to make the meaning of a sentence clear.

Computation. 40 minutes, 35 questions. This section of the test measures your ability to perform basic arithmetic operations and to solve problems that involve fundamental arithmetic concepts. The topics include whole numbers, fractions, decimals, percents, and applications using arithmetic.

Elementary Algebra. 40 minutes, 35 questions. This section of the test measures your ability to perform basic algebraic operations and to solve problems that involve elementary algebraic concepts. The topics include operations with real numbers, polynomials, algebraic fractions and square root expressions; the use of the rules of exponents; factoring; solving equations, inequalities, and systems of equations; graphs of linear equations; and solving word problems.

Many different kinds of multiple-choice questions are used in the test. A sample of these questions and of an essay topic follows. The answers to the multiple-choice questions appear on page 8.

The Essay

You will have 20 minutes to plan and write an essay on a topic like the one at the top of the next column. Read the topic carefully before you begin writing. This essay is assigned to give you an opportunity to show how well you can write. You should, therefore, take care to express your thoughts on the topic clearly and effectively. **How well you**

write is much more important than how much you write, but to cover the topic adequately you may want to write more than one paragraph. Be specific.

You may want to write an essay on this sample topic for practice.

Young people often want the power and privileges of older people, whereas older people often feel that childhood and youth are the happiest times of life.

Explain some of the advantages or disadvantages of being the age that you are now. Be specific.

Sample Responses

Good Response:

As a young woman of eighteen, I feel very fortunate to be young enough to enjoy the benefits of my youth and old enough to be wise in my decisions. Being young allows me to be more carefree than my parents because I have fewer responsibilities weighing my life down. I am old enough to choose my own friends and recreations, and I have a driver's license to permit me additional freedom. My parents trust my decisions as mature and responsible, which is very supportive. I am recognized by them as an adult, whereas my younger sister is slightly more restricted. I have also experienced the privilege of voting in a local election, which fulfills a sense of duty for me. My friends feel comfortable having someone to depend on, a responsibility I could not have held up to as well at fourteen. This expansion of my life experiences due to my age status is preparing me for my future by making me a more rounded person.

Being eighteen has its drawbacks. I am not allowed to buy alcohol in the state of New Jersey. This is not a major defeat, but to function in the social circles of adult life, one must socially drink. Because I am still a student, my age is overruled by my educational status. My parents, however supportive, still view me as a child in some respects because I still live in their house. I have not had the full responsibilities of an adult as yet, and the changes seem slow in coming.

In contrast to this, the life of a child of eight or nine sometimes seems much easier. It is sometimes difficult not to be envious of their carefree lives. I feel that being eighteen is a rich experience, in view of all of its advantages and disadvantages.

The twenty-minute writing sample is essentially a first draft. Despite the errors in diction and spelling, the writer obviously has control of the language; the ideas are generally clearly stated; they are organized; they are pertinent. The sentence structure has some variety. The errors in spelling are not frequent. The writer's major weakness is in the inexact use of words. Even so, the writing is strong enough to justify the rating of the total piece of writing as good.

Mediocre Response:

The advantages of being eighteen are numerous. First of all, it is a time when you are no longer considered a child. The majority of eighteen year olds are heading off to college. This is a new beginning because no longer will people do things for you. Now you must do it for yourself.

New ideas are developed by oneself the emergence of self-discipline and being independant are very important.

One of the best advantages is being on your own and doing what you want to do. This includes good studying habits, staying in shape and enjoying the night life.

I find that the disadvantages are very few. The best one is leaving all your high-school friends behind. The same people you got along with for four years.

Another disadvantage is unavailability of a full-time summer job. this would help cut the high cost of college tremendously.

Finally the lack of respect for not living up to your fullest expectations such as top honors in high school and all-country in basketball.

In closing I would like to say that being eighteen is the greatest time of life.

This sample is somewhat weaker. Some sentences are complete, indicating control of sentence structure, while others are fragments. There is some organization to the ideas, but that organization is not consistent. Some of the statements are clear; some are murky. The sentences are not very sophisticated in structure, but neither are they invariably simple. The writing is definitely in the middle range.

Weak Response:

If your in a family with older sisters and brothers you will learn. The older kids get more priveleges, to go out later, and not many questions asked of where they were. Young people have to be in earlier and account for everywhere they have been, Older people think childhood is better because they don't have the worries or expences as an adult which in turn makes their life happier. At the age I am at now respoucibility is greater than ever. Every step I take builds up my tomorrow. And every move I make counts either against it or for it. But now my time to make mistakes and learn how to improve them tomorrow.

This writing sample is definitely weak. The sample lacks organization; not even a topic sentence appears. The writer's difficulties with sentence structure, for example, make some of the ideas hard for the reader to comprehend on first reading. Even though the writer does have ideas and those ideas are all relevant to the topic, the writing is weak and the sample deserves a low score.

Reading Comprehension

Directions:

For each of the questions in this section, you are to select from the four suggested answers the one that is best and fill in the corresponding space on your answer sheet.

Some of the questions will test how well you understand certain passages. Answer these questions on the basis of what is *stated* or *implied* in the passage.

After the following passage, there are sample questions followed by explanations of the best answers.

Questions 1-4

¹There is a great deal of communication between Chinese teachers and parents, especially when the younger children move into new school settings. ²Some communication takes place informally when parents walk young children to the school or pick them up, but there are a number of other more formal modes of communication, usually initiated by the schools. ³These include meetings for parents, most often held early in the school year or at the end of the year, visits from teachers to the homes of the students, and small notebooks that pass back and forth between school and home, referred to as "communication books" or "connection notebooks." ⁴The exchange between school and home in China, apparently so much more fluid and continuous than that in the United States, may be the result of the more stable and tighter organization of Chinese neighborhoods. ⁵Schools generally seem to be less isolated from homes in China than they are in the West.

1. The main idea in this passage is that

- (A) schools in China are better organized than are schools in the United States
- (B) communication between teachers and parents in the United States is poor
- (C) Chinese parents and teachers communicate frequently with each other
- (D) communication between parents and teachers eliminates certain problems in China's schools

The first sentence of the paragraph indicates what the paragraph is about, and the idea of that first sentence is contained in choice (C). Organization of schools and problems in the schools are not mentioned in the paragraph, and (B) may be implied in the passage but it is not the main idea. Students who did not answer this question correctly were clearly not reading the passage carefully.

2. According to this passage, most informal communication between Chinese parents and teachers occurs

- (A) at the beginning and end of a young child's school day
- (B) when a child is doing well enough to be promoted
- (C) when parents voluntarily come to the school to inquire about the child's progress
- (D) when parents request that the teacher visit them at home

The answer to this question is contained in the second sentence of the paragraph. Choice (A) restates the information provided there.

3. The author suggests that the school-family connection in China is

- (A) similar in most aspects to what it is in the United States
- (B) supported by neighborhood organizations
- (C) stronger than it is in the United States
- (D) usually controlled by the parents

The inference is based on the last two sentences. To arrive at (C) the student needs to understand the implications of "more fluid and continuous" and "less isolated from."

4. What is the function of sentence 5 in the passage?

- (A) It clarifies and concludes ideas presented in sentence 4.
- (B) It introduces an implied comparison.
- (C) It provides an exception to a point made in sentence 4.
- (D) It introduces a new idea.

Sentence 5 continues the comparison between parent-teacher communication in China and parent-teacher communication in the United States, restating the comparison directly and briefly. Sentence 5 therefore functions in relation to sentence 4 as described in choice (A).

The following passage is followed by sample questions without explanations.

Questions 5-7

¹In at least one sense, the years had been kind to Rachel Isum Robinson, the wife of the first Black baseball player to be a member of a major league team. ²She remained a handsome woman, with soft, unlined skin. ³Escorting my wife and me into her living room, she walked with elegance and there was a warmth to her manner, and the two, elegance and warmth, blended into graciousness.

⁴"Won't you sit down?" ⁵On one side of the spacious room, a window wall overlooked a bright lawn and water.

⁶Opposite, gray stone arched above the fireplace, no visible mortar interrupted the flow of stone. ⁷"The builder," Rachel said, "was marvelous. ⁸He meant this place to be a monument; of course, we have never been sure whether for us or for him."

⁹She climbed two carpeted stairs into a dining alcove and returned with refreshments. ¹⁰Only then did we start to talk. ¹¹"One thing about my background in California was that I was brought up to be as ladylike as possible. ¹²I was taught not to be aggressive. ¹³And then, marrying Jack, I was in the middle of a struggle where — well, without aggressive behavior, it would have failed. ¹⁴There was an aggressiveness to Jack's whole career in baseball. ¹⁵It was a kind of objection to the White society."

¹⁶"A very mild objection." ¹⁷Treading softly, Jackie Robinson had entered his living room. ¹⁸"Go on, go on," he said quietly.

5. The main purpose of the passage is to

- (A) suggest the close relationship between the Robinsons
- (B) suggest Rachel Robinson's character
- (C) analyze Rachel Robinson's motives
- (D) analyze the effects of the Robinsons' struggle

6. The first sentence suggests that Rachel Robinson

- (A) works hard to forget the past
- (B) dislikes intrusion into her life
- (C) has not led a carefree life
- (D) works hard to control her emotions

7. The author's attitude toward Rachel Robinson is one of

- (A) grudging respect
- (B) reserved judgment
- (C) admiration
- (D) neutrality

Sentence Sense

The Sentence Sense section uses two kinds of multiple-choice questions. The first requires the students to identify faults in sentences and make appropriate corrections. The second asks students to rewrite sentences, much as they would do when editing their own writing.

The problems presented to the student for correction are concerned mainly with the structure and logic of sentences, not with problems of subject-verb agreement and the like. Questions deal with expressing ideas clearly and accurately, appropriately coordinating or subordinating ideas within sentences, and recognizing complete sentences. The types of questions used ask students either to identify and correct problems in sentences or to recast sentences to change structure or emphasis—tasks they might perform when they write themselves.

Examples of the types of multiple-choice questions used in the Sentence Sense section follow.

Select the best version of the underlined part of the sentence. Choice (A) is the same as the original sentence. If you think the original sentence is best, choose answer (A).

8. The record is held by Andrea, it is in the hundred-yard dash.

- (A) The record is held by Andrea, it is in the hundred-yard dash.
- (B) Andrea holds the record in the hundred-yard dash.
- (C) The record in the hundred-yard dash being held by Andrea.
- (D) The hundred-yard dash record, which is held by Andrea.

This question asks the student to recognize first that the original sentence neither fits the traditional definition of a complete sentence nor presents the ideas in it in an appropriate way. Choice (B), which is the correct response, eliminates the comma fault and conveys the required information briefly and clearly.

9. Jenny's Cinderella costume was more elaborate than Henry, who wore a ghost costume.

- (A) Henry, who wore a ghost costume.
- (B) Henry in a ghost costume.
- (C) Henry's ghost costume.
- (D) Henry's who wore a ghost costume.

This question presents a problem in logic in that the original sentence compares a costume to a person. The sense of the sentence requires that two costumes be compared. Choice (C) is the only one that provides that comparison.

In the following questions, you are going to be asked to rewrite sentences in your head. You will be told exactly how to begin your new sentence. Keep in mind that your new sentence should be well written and should have the same meaning as the sentence given you.

10. George saw no familiar faces when he looked around the room.

Rewrite, beginning with

Looking around the room, . . .

The next words will be

- (A) George saw no familiar faces
- (B) no familiar faces could be seen
- (C) and seeing no familiar faces
- (D) then George saw no familiar faces

To answer this question, the student must remember that George is looking around the room and that, therefore, *George* must be the word to follow the comma in the new sentence. Only by using *George* can the student avoid creating a sentence that has a dangling modifier.

11. If she had not agreed to work late this evening, she would be able to go shopping for Eleanor's birthday present.

Rewrite, beginning with

She cannot go shopping for Eleanor's birthday present. . .

The next words will be

- (A) since her agreement
- (B) even though she agreed
- (C) without first agreeing
- (D) because she has agreed

The sense of the original sentence is kept only when (D) is used to form the new sentence: She cannot go shopping for Eleanor's birthday present because she has agreed to work late this evening.

Computation

Directions: Solve each of the following problems.

1. Of the following which is closest to: $\sqrt{4,000}$?

(A) 40 (B) 60 (C) 200 (D) 2,000

2. Which of the following is greatest?

(A) $\frac{2}{3}$ (B) $\frac{5}{12}$ (C) $\frac{1}{2}$ (D) $\frac{3}{8}$

3. $\frac{3}{4} - \frac{1}{2} + \frac{2}{5} =$

(A) $\frac{3}{20}$ (B) $\frac{4}{11}$ (C) $\frac{4}{7}$ (D) $\frac{13}{20}$

4. $23.5 \times 3.04 =$

(A) 714.4 (B) 79.9 (C) 71.44 (D) 7.99

5. 16 is what percent of 80?

(A) 5% (B) 12.8% (C) 20% (D) 64%

6. Bill purchased a car and made a down payment of \$560. If the down payment was $\frac{1}{5}$ of the purchase price, what was the purchase price?

(A) \$112 (B) \$2,240 (C) \$2,800 (D) \$4,480

Elementary Algebra

Directions: Solve each of the following problems.

7. If $x = 4$ and $y = -2$, then $x^2y - xy^2 =$

(A) 48 (B) 16 (C) -16 (D) -48

8. $\sqrt{18} + \sqrt{8} =$

(A) $\sqrt{26}$ (B) $5\sqrt{2}$ (C) 10 (D) 12

9. If $2x + 3(x - 2) = 30$, then $x =$

(A) $\frac{5}{36}$ (B) $\frac{24}{5}$ (C) $\frac{32}{5}$ (D) $\frac{36}{5}$

10. One factor of $3a^2 - 13a - 10$ is

(A) $(3a + 2)$ (B) $(3a - 5)$ (C) $(a + 2)$ (D) $(a + 5)$

11. If A represents the number of apples purchased at 15 cents each and B represents the number of bananas purchased at 10 cents each, which of the following represents the total purchase price in cents?

(A) $25AB$ (B) $25(A + B)$ (C) $15A + 10B$ (D) $A + B$

12. $\frac{5}{a} + \frac{7}{b} =$

(A) $\frac{12}{a+b}$ (B) $\frac{12}{ab}$ (C) $\frac{5b+7a}{a+b}$ (D) $\frac{5b+7a}{ab}$

Key to Sample Questions

ENGLISH		MATHEMATICS	
1. C	7. C	1. B	7. D
2. A	8. B	2. A	8. B
3. C	9. C	3. D	9. D
4. A	10. A	4. C	10. A
5. B	11. D	5. C	11. C
6. C		6. C	12. D

The Basic Skills Council is an advisory group that oversees test development, administration, and policy for the New Jersey College Basic Skills Placement Test.

Deborah P. Wolfe
Chair, Board of Higher Education

T. Edward Hollander
Chancellor of Higher Education

Anthony D. Lutkus, *Director*
New Jersey Basic Skills Assessment Program

BASIC SKILLS COUNCIL

Robert Lynch, *Chair*
New Jersey Institute of Technology

Susan Mulligan
Essex County College

Kwaku Armah
Department of Higher Education

Richard Nurse
Rutgers University

Madan Capoor
Middlesex County College

Albert Porter
Mercer County Community College

Walter Cmielewski
Mt. Olive High School

Sybil Smith
Montclair State College

Herbert Green
Public Education Institute

Kurt Spellmeyer
Rutgers University

Lewis Hirsch
Rutgers University

Program Staff
Faye Frieson
Dennis Levy
David Boliver
Faculty Fellow 1989-90

Jane Jacobs
Upsala College

Anthony D. Lutkus
Department of Higher Education

Nina Jemmott
Ex Officio, College Outcomes
Evaluation Council Representative
New Jersey Institute of Technology

Dorothy Minkoff
Trenton State College

APPENDIX B

Participating Independent and Proprietary Institutions

Berkeley College of Business

Caldwell College

Centenary College

Fairleigh Dickinson University--
Madison, Rutherford, & Teaneck Campuses

Felician College

Georgian Court College

Katharine Gibbs School

Seton Hall University

Upsala College

Westminster Choir College

APPENDIX C

NJCBSPT Year to Year Score Equating

Raw scores for the NJCBSPT are computed simply by adding the points awarded for each correct answer. However, the official scores for the NJCBSPT are reported as scaled scores which are derived by applying a conversion formula to the raw scores. The reason for reporting scaled scores is that they can be made comparable across different years, since a new form of the test is developed annually.

Equating is the statistical process that makes it possible to report scaled scores that have essentially the same meaning for different forms of a test. Scores on each new form of the NJCBSPT are equated to scores on the previous form. These scores on the previous form are already "on scale." That is, the formula or table that converts raw scores to scaled scores on the previous form has already been defined. The equating process links each possible raw score on the new form to a scaled score on the previous form.

Simply put, the object of equating is to have the same scaled score on any form of the test represent the same level of the ability the test is measuring. A scaled score of "165," for example, would mean the same thing from one year to the next. However, this definition is not precise enough to serve as the basis for a statistical procedure. A more precise definition is the "equipercentile" definition. It states that a score on one form of the test is equated to a score on another form in a group of students if the two scores have the same percentile rank in that group of students. For example, suppose that in a group of students the 34th percentile on Form A of a test is a raw score of 12; that is, 34 percent of the students scored below 12 on Form A. And suppose that in this same group of students, the 34th percentile on Form B is a raw score of 13; that is, 34 percent of the same group of students scored below 13 on Form B. Then in this group of students a raw score of 13 on Form B would equate to a raw score of 12 on Form A, and these two raw scores would correspond to the same scaled score. This definition forms the basis for the equating of NJCBSPT scores. Methods based on other, simpler definitions are often used, but only when their results are consistent with the results of methods based on the equipercentile definition.

For the NJCBSPT, there is no group of students taking the new form and the previous form under the same conditions (i.e., at approximately the same time, with no instruction in between). The information that links the new form with the previous form is provided by "common items" -- questions repeated from the previous form of the test. The equating methods used for the NJCBSPT assume that students with the same score on the common items would do equally well or poorly on the non-common items of the test. If a group of students performs better on equating items (ca. 40% of the test) than the group who took the test the previous year, this would indicate an improvement in basic skills level.

For example, suppose we focus our attention on the students who took last year's form and answered exactly 10 of the common items correctly. Suppose their average raw score on the full test (last year's form) was 19. Then we would assume that this year's students who answered 10 of the common items correctly would also have had an average raw score of 19 on last year's form, if they had taken it.

This assumption makes it possible to estimate the scores that this year's students would have earned on last year's form and also the scores that last year's students would have earned on this year's form of the test. Therefore, it is possible to estimate the percentiles on either form in the combined group of this year's students and last year's students. The equating is based on the estimated percentiles (or other score statistics) in this combined group.

Some of the equating methods used for the NJCBSPT automatically produce a "linear" equating formula -- one that can be represented on a graph by a single straight line. Methods based on the "equipercentile" definition of equating produce a table linking each score on the new form to a score on the old form, but this table cannot be precisely represented by a simple formula. However, the statisticians who equate the NJCBSPT now approximate this table by a series of linear equating formulas -- different formulas in different portions of the score range.

ETS performs score equating on the basis of the test results received by May and again on the basis of the cumulative results received through September. Each of these equatings includes the application of at least three statistical models: two linear models and one curvilinear model. A second curvilinear model is used if there is evidence of curvilinearity in the equating results. The standard ETS equating software

includes linear models based on the work of Tucker and Levine. When there is little evidence of curvilinearity, the Tucker method is preferred if the old and new form samples of students are quite similar in anchor test means and variance, while the Levine method is preferred if the samples of students differ substantially in anchor test means or variances. When old and new test forms differ in length, as did the Reading Comprehension test forms between 1984 and 1985, the Levine method for tests of unequal reliabilities is used in place of the Tucker method for tests of equal reliabilities. The standard ETS method includes a curvilinear model based on an equipercentile equating of the new form to the old form by equating each to the anchor test of common items. A second curvilinear equating method is equipercentile equating, based on frequency estimation. The above equating models are described in Angoff's chapter of *Educational Measurement* (edited by R. L. Thorndike, American Council on Education, 1971). The equating procedures are performed with a package of standard ETS equating computer programs. The programs have been successfully used in ETS testing programs (including the NJCBSPT) for many years. ETS measurement statisticians review the results of all equating models applied and choose the raw-to-scale score conversion that best reflects the differences in test difficulty indicated by the equating results.

Each year, after the first cycle of scoring, ETS issues to the colleges the "final form" of the raw-to-scaled score conversion table that links the NJCBSPT scaled scores from year to year.

APPENDIX D

A Description of the Proficiency Levels Established by the Basic Skills Council as a Guide for College Placement Procedures

Based upon its understanding of the content and difficulty level of the NJCBSPT, and upon the recommendations of its advisory committees, the Council offers the following general propositions to assist in understanding the test results presented in this report.

Verbal Skills

For the purpose of this report, students who scored below 161 on Total English* were placed in the "Lack Proficiency" category. Those who fell in the 161-172 range on Total English were placed in the "Appear to be Proficient in Some Areas" category while those students above 172 on Total English "Appear to be Proficient." A more precise understanding of an individual student's scores can be achieved by considering the following.

In the Council's judgment, all students with essay scores of 2, 3 or 4, and those students with an essay score of 5 or 6 but fewer than 80 percent correct on either of the two multiple-choice tests, are seriously deficient in their use of written language. An essay score of 2, 3, or 4 indicates pronounced weakness in writing: in these essays the message is not always clear, the idea is either not developed or not logical, and the conventions of written language are usually not observed. An essay score of 5 or 6, together with fewer than 80 percent correct on one or both of the multiple-choice tests, indicates a need for help in following the conventions of written language, and in developing and comprehending an idea in a coherent manner.

Many students exhibit a pattern of performance that must be reviewed more carefully, since they probably require some assistance in one or more areas according to the requirements and standards of the individual colleges. Students in this category

*Total English is a composite score based on all three reading and writing sections.

either did not demonstrate proficiency in one or more areas, or their essay and multiple choice scores may have exhibited a discrepancy. For example, a high essay score and a low Sentence Sense score is a pattern that bears examination. Essay scores of 5, 6 or 7 together with multiple-choice scores above 80 percent correct are "average" in that the essays tend to lack depth and coherence and, despite the multiple-choice scores, the writing samples may exhibit flaws in structure and/or language conventions. An essay score of 7 combined with scores of less than 80 percent correct on one or both of the multiple-choice tests indicates at best a marginal performance. An essay score of 8-12 combined with fewer than 80 percent correct on any one of the multiple-choice tests is a discrepant pattern, since the essay score indicates a range from above-average to excellent, and the multiple-choice scores appear to contradict the essay score.

Students with essay scores of 8-12 and 80 percent correct on both multiple-choice tests seem to be proficient in the basic skills of reading and writing. The writers of these essays have control of both the language and the structures they are using; generally speaking, they can comprehend a relatively mature idea and develop it in standard English.

Computation

A scaled score of 164 or below (18 or fewer questions correct out of 30 on the 1989 test) indicates pronounced weaknesses in dealing with certain computational operations and, in particular, with problems involving percentages and decimals. Declining scores indicate progressively greater difficulty with operations involving fractions. Students scoring at or below 164 on the Computation test are included in the category: "Lack Proficiency."

The range of scaled scores from 166 to 172 (19 to 24 questions correct) indicates greater familiarity with Computation but still shows definite weaknesses. The particular weaknesses of a student can be identified only by examining individual item responses. Students falling in the range of 166 to 172 on the Computation test fall in the category, "Appear to be Proficient in Some Areas."

Students who achieve a scaled score of at least 174 (25 questions correct) seem to be proficient in the computational skills measured by this test and fall in the "Appear to be Proficient" category.

Elementary Algebra

Students who achieve a scaled score of 165 or below (13 or fewer questions correct out of 30 on the 1989 test) lack any understanding of Elementary Algebra. Such students may possess a smattering of knowledge but have difficulty with a wide variety of elementary operations, and are not able in general to perform sustained operations involving a succession of simple steps. Students in this category, "Lack Proficiency" probably need to restudy Elementary Algebra from the beginning.

The particular difficulties of students who score in the scale range from 167 to 181 (14 to 24 questions correct) vary. They have some misconceptions, have some trouble dealing with equations involving letters rather than numbers, and probably cannot handle sustained operations well. The type of assistance or course work such students may require will depend on each student's background and can be determined by careful examination of the particular patterns of item responses. Students scoring in the range of 167 to 181 on Elementary Algebra are included in the "Appear to be Proficient in Some Areas" category.

Students who achieve a scaled score of 182 and above (25 or more questions correct) seem to have no widespread weaknesses in performing elementary algebraic operations and fall in the "Appear to be Proficient" category. They probably can do simple, sustained operations. The test, however, does not extend far enough in difficulty level to determine whether students scoring in this highest range are able to complete a more complex succession of simple operations.

ADDITIONAL NJCBSPT PUBLICATIONS AND RELATED REPORTS*

Information Bulletin 1991.

Interpreting Scores on the New Jersey College Basic Skills Placement Test.

Interpreting Mathematics Scores on the New Jersey College Basic Skills Placement Test.

Scoring the Essays.

Research Monographs:

Cycle-to-Cycle Consistency of the Scoring of NJCBSPT Essays. Educational Testing Service, 1986.

The Effects of Time Limits on the Quality of NJCBSPT Essays. Educational Testing Service, 1987.

Teaching Reading & Writing. New Jersey Basic Skills Council, 1984.

Thinking Skills: An Overview. New Jersey Basic Skills Council, 1986.

Effectiveness of Remedial Programs in Public Colleges and Universities, Fall 1984-Spring 1986. New Jersey Basic Skills Council, 1988.

*Publications and reports are available from the Basic Skills Assessment Program, New Jersey Department of Higher Education, 20 West State Street, CN 542, Trenton, NJ 08625, (609) 292-8881.